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Climate-Resilient Ecosystems and Livelihoods (CREL)
AID-388-A-12-00007

Annual Progress Monitoring Report
October 1, 2013 – September 30, 2014

Submitted to

U.S. Agency for International Development
Bangladesh Mission, Dhaka, Bangladesh

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October 31, 2014
Revised December 3, 2014

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Abbreviations & Acronyms

BAGH	Bengal Tiger Conservation Activity
BCAS	Bangladesh Center for Advanced Studies
CBO	Community-based Organization
CBT	Community Based Tourism
CCF	Chief Conservator of Forests
CMC	Co-Management Committee/Council
CMO	Co-Management Organization
CBAECA	Community-based Adaptation in Ecologically Critical Areas
CDMP	Comprehensive Disaster Management Program
CNRS	Center for Natural Resource Studies
CODEC	Community Development Centre
CPG	Community Patrol Group
CREL	Climate-Resilient Ecosystems and Livelihoods
CRPARP	Climate Resilient Participatory Afforestation and Reforestation Project
DFO	District Forest Officer
DMIC	Disaster Management Information Centers
DOAG	Development Objective Agreement
DOE	Department of Environment
DOF	Department of Fisheries
DOI	Department of Interior
DPP	Development Project Partners
DRR	Disaster Risk Reduction
ECA	Ecologically Critical Areas
FtF	Feed the Future
FELC	Financial Entrepreneurship and Literacy Center
FAO	Food and Agriculture Organization
FD	Forest Department
FIVDB	Friends in Village Development Bangladesh
GBA	Gender Based Violence
GFP	Gender Focal Person
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GOB	Government of Bangladesh
GRC	Grants Review Committee
IDLC	Industrial Development Leasing Company
IFAD	International Fund for Agriculture Development
IFPRI	International Food and Policy Research Institute
IPCC	Intergovernmental Panel on Climate Change
IPAC	Integrated Protected Area Co-Management
ITAP	International Technical Assistance Program
IVR	Interactive Voice Response
LCG	Local Consultative Group
LSP	Local Service Provider
MACH	Management of Aquatic Ecosystems through Community Husbandry

MFF	Mangroves for the Future
MOEF	Ministry of Environment and Forests
MOFL	Ministry of Fisheries and Livestock
MOL	Ministry of Land
MOU	Memorandum of Understanding
NACOM	Nature Conservation Management
NP	National Park
NRM	Natural Resource Management
NTFP	Non Timber Forest Product
NSU	North South University
OCAT	Organizational Capacity Assessment Tool
PA	Protected Area
PCR	Project Completion Report
PCVA	Participatory Climate Vulnerability Assessment
PGNA	Participatory Gender Need Assessment
PF	People's Forum
REDD	Reducing Emissions from Deforestation and Degredation
RFA	Request for Applications
RIMS	Resource Information Management System
RMO	Resource Management Organization
RUG	Resource User Group
SDC	Swiss Development Corporation
SDLG	Strengthening Democratic Local Government
SLG	Savings and Loans Group
SNP	Satchari National Park
SRCWP	Strengthening Regional Cooperation for Wildlife Protection Project
SOP	Standard Operating Procedures
TAC	Technical Advisory Committee
TNA	Training Needs Assessment
TOCAT	Technical and Organizational Capacity Assessment Tool
TOR	Terms of Reference
ToT	Training of Trainers
TPP	Technical Project Proforma
UCC	Upazila Coordination Committee
UNDP	United Nations Development Program
VAT	Value Added Tax
VCF	Village Conservation Forum
VCG	Village Conservation Group
WBRP	Wetland Biodiversity Rehabilitation Project
WEAI	Women's Empowerment in Agriculture Index
WS	Wildlife Sanctuary

1 Introduction

USAID/Bangladesh awarded Cooperative Agreement No. AID-388-A-12-00007 to Winrock International to implement the Bangladesh Climate-Resilient Ecosystems and Livelihoods (CREL) Project in partnership with local and international collaborators on September 17, 2012. CREL is a five-year \$32.6 million project to scale up and adapt successful co-management models to conserve ecosystems and protected areas (PAs), improve governance of natural resources and biodiversity, and increase resilience to climate change through improved planning and livelihoods diversification. By implementing this project, CREL is responding to its stated objective of “*Increased responsiveness and resilience to climate change in vulnerable biologically diverse environments.*”

Through the CREL Project, Winrock and its partners are addressing environmental, socioeconomic and policy/legal issues that threaten biologically sensitive areas by scaling up proven approaches to increase conservation and resilience to climate change. The CREL team is achieving this goal by increasing the capacity of individuals, communities and government to adapt and mitigate the impacts of climate change.

CREL builds on USAID’s past investments to strengthen natural resource management (NRM) and livelihoods under the Management of Aquatic Ecosystems through Community Husbandry (MACH) project, the Nishorgo Support Program, and the Integrated Protected Area Co-management (IPAC) project.

CREL Implementing Partners

Bangladesh

Bangladesh Centre for Advanced Studies (BCAS)
Center for Natural Resource Studies (CNRS)
Community Development Centre (CODEC)
Nature Conservation Management (NACOM)

International

WorldFish Center, Bangladesh
TetraTech/ARD

Government of Bangladesh

Ministry of Environment and Forests (MOEF)

- Department of Environment (DoE)
- Forest Department (FD)

Ministry of Fisheries and Livestock (MOFL)

- Department of Fisheries (DOF)

Ministry of Land (MOL)

CREL has four inter-related components which make up the Intermediate Results (IRs) of the Results Framework:

Component 1: Improved governance of natural resources and biodiversity

Component 2: Enhanced knowledge and capacity of stakeholders

Component 3: Strengthened planning and implementation of climate-resilient NRM and adaptation

Component 4: Improved and diversified livelihoods (i.e., environmentally sustainable and resilient to climate change)

The Project operates in three regions of Bangladesh: the haors and forests of the Northeast Region (i.e., based in Srimongol, with expansion into other districts), the Southwest Region

focused on the Sundarbans (i.e., based in Khulna), and the Southeast Region's forests and coastal wetlands (i.e., based in Chittagong and Cox's Bazar).

This Annual Progress Report describes the accomplishments and outputs for the second year of the project from October 1, 2013 through September 30, 2014. It also responds to the requirements of Section A.5.b.i of the Cooperative Agreement.

1.1 Engagement Strategy and Coordination with GOB

During year 2, the CREL team faced the major task of consolidating the engagement of the government in the program at all levels. In parallel with implementing the Project, CREL facilitated the development, drafting, and agreement of a Technical Project Proforma (TPP) with the Department of Environment (DOE) and Forest Department (FD) of the Ministry of Environment and Forests (MOEF) and the Department of Fisheries (DOF) of the Ministry of Fisheries and Livestock (MOFL). Normally these are in place before the start of a project; fortunately, CREL was able to continue to work even while the TPP development was taking place. All three TPPs for the FD, DOF, and DOE were drafted and approved by the respective departments for onward submission to the relevant ministries and from there to the Planning Commission. The TPP of the DOF is now in the Planning Commission awaiting its approval; the TPPs of the DOE and FD are in the MOEF and about to go to Planning Commission for approval.

During the initial stages of year 2, CREL faced challenges because there was no TPP for the project and limited ownership from the government. Through regular meetings and capitalizing on personal relationships, CREL obtained engagement of the departments and full cooperation by the end of year 2. Government officers working under the three departments in the field and at headquarters led workshops for identifying the natural resource dependent populations, resource substitution opportunities, and climate resilient livelihood options, facilitated forest CMO sustainability action plans and annual work plans for year 3 and participated in awareness and sensitization events for a number of observation-day occasions. One recommendation for the future is that an approved TPP either be in process or already in place before a future development project begins operations, particularly with the Forest Department. CREL's experience with the DOF and the DOE was that development of the TPP could parallel the start-up of the project, although pre-project completion of their TPP is also preferable.

A strong working relationship has now been built by CREL with all three departments and the three ministries that the project works with. One highly significant achievement in this regard has been the emergence of a strong partnership with the Ministry of Land (MOL), the custodian of public (government owned) permanent water bodies (known as jolmohals) the critical features in wetland ecosystems. During year 2, the Additional Secretary and Deputy Secretary of the MOL visited CREL wetland sites in Srimongol and propelled local land administration support for conservation and co-management. The Secretary of the MOL has been very supportive of CREL, and has come forward to support CREL proposals and initiatives for wetland policy and

management. The Secretary was instrumental in advancing the expansion of existing sanctuaries and the inclusion of CMO members in District committees. The majority of wetland areas that CREL is working with are located in Moulvibazar District, and a district-level wetland management committee for local level policy implementation support was proposed and approved by the MOL. This district committee will be formed during the first half of year 3. The MOL has also indicated that they are also willing to consider new sanctuary proposals, including the establishment of sanctuary status for regenerating wetland swamp forests in Hakaluki Haor.

Project Steering Committees (ministerial) and Departmental Committees (technical) have been framed, accepted and included in the TPPs, and are now moving through the GOB's approval process. The GOB is obligated to form these committees once the TPPs are approved, which is expected to occur during year 3.

1.2 Coordination with other Projects and Donors

CREL continues to coordinate closely with other USAID projects and other donor projects at the landscape level. During year 2 CREL coordinated with many of the Feed the Future (FtF) programs, as well as supported USFS activities and trainings of trainers (ToTs). At the request of the USAID mission, CREL helped support a field trip by the US Department of the Interior (DOI) team in Cox's Bazar and Sylhet to help them design their program as well as better understand what CREL was doing in each of these areas.

From the beginning of the BAGH project, CREL has offered support, particularly in the design of their monitoring and evaluation (M&E) system as well as their livelihood program. CREL and BAGH have agreed to hold regular monthly meetings; during year 3 CREL will continue its coordination and information sharing with the BAGH project. Because both projects are working in some of the same areas, it is very important that the livelihood approach of the BAGH project is in harmony with CREL's approach. If the BAGH project does not adopt the market-based approach employed by CREL, there is a risk that CREL's local service providers could be undermined and the sustainability of the approach jeopardized. CREL has had numerous meetings with BAGH in this regard and shared the details about its approach as well as data on CREL beneficiaries and areas where the two projects overlap.

CREL believes that CMOs are central to attaining sustainable climate-resilient ecosystems and livelihoods. CREL's mandate includes strengthening the functional and financial sustainability of CMOs in wetlands and around forest PAs. To accomplish this, CREL actively seeks partnerships with other projects and non-governmental organizations (NGOs).

CREL has regular coordination meetings with the Arannayk Foundation, where decisions about who will support what in common working areas, such as Chunoti PA, are taken together. As agreed, CREL is building the capacity of the CMOs to practice conservation and protection as well as supporting biophysical improvements, and the Arannayk Foundation is supporting diversification in sustainable livelihoods for forest-dependent households and communities.

CREL has also worked with the Strengthening Regional Cooperation for Wildlife Protection Project (SRCWP) through existing co-management organizations.

CREL has worked closely with the World Bank-supported Climate Resilient Participatory Afforestation and Reforestation Project (CRPARP), the Fishery Resources Survey Project of WorldFish (funded by IFAD), the Wetland Biodiversity Rehabilitation Project (WBRP) (funded by GIZ), Mangrove for the Future (MFF)-IUCN, Community based Sustainable Management of Tanguar Haor Project of MOEF implemented by IUCN (funded by SDC) and DOF projects (funded by GIZ).

In addition, CREL closely coordinates with the FAO, UNDP, GIZ, the World Bank and other donors/projects to ensure complimentary activities and avoid redundancies in support to stakeholders and beneficiaries. CREL has worked in cooperation with SRCWP since start-up, and this continues through USAID-supported coordination meetings. CREL has also worked closely with the WBRP/GIZ in a combined effort to amend the wetland management policy. USAID, UNDP, GIZ, WorldFish, Center for Natural Resources Studies (CNRS), BRAC University, IUCN and CREL formed a working group to address the wetland management policy issues. CREL is providing policy support to the group, and liaising with the MOL, MOEF and MOFL. CREL also links with the private sector, to leverage greater support particularly for the market based livelihood program.

Table 1 below provides a list of NGO and private-sector organizations CREL has collaborated with in order to more fully support its mandate.

Table 1: NGO and Private Sector Collaboration

	Organization	Type	Area of Support to CREL
1	CODEC	NGO	Micro Finance
2	CNRS	NGO	Micro Finance
3	IDLC	Private Sector	Sustainable livelihoods through CSR support
4	PebbleChild	Private Sector	Handicraft Training and workforce development (two phases)
5	JOAR NGO	Mangrove For Future (MFF-IUCN) Project	Community-based tourism and employment for resource-dependent
6	CBT Bangladesh	Private Sector	Community-based tourism
7	Arannayk Foundation	Foundation	Livelihood Activity
8	Community-based Tourism Bangladesh	Private Sector	Tourism-based entrepreneurship development
9	WorldFish, FtF, AIN	NGO	LSP (Local Service Provider) training and technical support

2 Program Management

Following the completion of mobilization of field staff Year 1, the full-scale field implementation of the CREL project began in year 2. Procurement of non-expendable items was completed and all items delivered to the respective regions and site offices. All required facilities and systems have been put in place and CREL became fully operational in all four regions (e.g. Srimongol, Chittagong, Cox's Bazar and Khulna), with specific emphasis given to achieve field-based assessments and work plan activities.

At the conclusion of year 2, CREL is successfully operating 1 central, 4 regional and 23 site offices, with a total complement of 265 staff who are managed or supported by Winrock and its five local and one international partners. For rapid field mobility, CREL-acquired motorcycles were distributed among project partners to facilitate activity implementation and our capacity to reach out to the people and organizations in local communities.

2.1 Operations

All CREL field operational policies ensuring USAID and Winrock procedures are in effect and followed. To adopt to the demands of the field requirements, minor field implementation modalities were implemented in the Khulna Region. To accelerate and ensure effective GOB stakeholder participation, CREL provided considerable support to helping develop Technical Project Proformas for the Forest, Environment and Fisheries departments. All procedural facets of the project are meticulously followed, and all applicable forms as developed, are in use. In addition, regular periodic accruals information, fund forecasts, invoices and monthly reporting of value-added taxes (VAT) and data entry into TraiNet has been continued. During year 2, Winrock home office staff conducted an internal review of the policies, procedures and records of the CREL office in Dhaka, to help ensure the project's full compliance with all USAID standard regulations and required procedures, documentation and reporting.

2.2 Personnel

A few positions fell vacant in year 2 due to resignations. All these positions were subsequently filled and included: Grants Manager, Communications Manager, Grants Officer and Manager, and Landscape Planning. While recruiting, CREL followed standard competitive procedures and made a special effort to recruit women as much as possible. Periodic staff meetings to include regional coordination, technical and work plan have continued. Winrock continued to provide annual orientation trainings on code of ethics and gender to all staff during year 2.

Short-term assignments by staff personnel and expert consultants and other visitors included:

- **Ms. Jane E. Gindin**, Winrock International Consultant, provided technical guidance to the CREL communication team in developing various communication materials.

- **Ms. Darlene Middleton**, Senior Program Officer, Winrock International, to provide orientation to the newly recruited Grants Manager and Officer and worked closely with them in developing grants proposals, approvals and agreements.
- **Mr. Kevin Brown**, Senior Program Associate, Winrock International Ecosystems Services Unit. He provided scoping and guidance on Forestry Carbon Inventory.
- **Michael Netzer**, Senior Program Associate, Winrock International Ecosystems Services Unit. Mr. Netzer provided scoping and recommendations on REDD+ and GIS activities.
- **Hugh Cresser**, Senior Consultant from Tetra-Tech ARD. Visit CREL sites, assess and identify potential ecotourism opportunities and interventions.
- **Ms. Bernice Yalley**, Senior Program Associate, Winrock International. She worked with the Senior Program Officer and guided in developing grants proposals, approvals and agreements.
- **Ms. Erin Hughes**, Senior Program Officer, Winrock International. Ms. Hughes assisted in reviewing year 2 activities and in preparation of year 3 Work Plan.
- **Ms. Charla D. Britt**, Senior Consultant from Tetra-Tech ARD. She worked with the gender team in finalizing CREL gender strategy and posters design development.
- **Ms. Swati Patel**, Winrock International Consultant. She worked with the CREL grants team to provide training to the selected transitional grants recipients.
- **Ms. Victoria Solbert**, Winrock International Volunteer. She worked in reviewing and assessing CREL livelihood approach and activities.
- **Ms. Olivia Feldman**, Winrock International Volunteer. She began working in September to help the Communication Team identify and draft success stories and communication materials in English.

Two other visits facilitated by Winrock (at minimal cost to CREL) were for George Figdor and Timothy C. Holder, who trained CREL communications team members in taking quality pictures of nature and developing quality communication products.

3 Program Progress and Key Achievements

At the conclusion of year 2, nearly all CREL activities were on schedule in accord with the Year 2 Work Plan. Deliverables were either completed or in-process. CREL's annual work plan underpins a phased approach to accomplishing its overall objective of "Increased responsiveness and resilience to climate change in vulnerable biologically diverse environments" and the four associated IRs set out in the results framework. Ultimately, the progress of the project is measured against targets set for the 19 agreed indicators in the June 2013 revised and approved Monitoring and Evaluation Plan. Details of progress against indicators are given in Annex II. Progress measured against the two objective-level indicators is mostly on track: an estimated 301,781 mt. of CO₂e sequestered, largely from continued forest protection under co-management; and, an estimated 9,941 stakeholders have increased capacity to adapt to the impacts of climate variability (having participated in preparing village-level adaptation plans or adopting climate-resilient agriculture practices after CREL training).

Underpinning the other three Component (Intermediate Results - IRs) is the capacity building Component (IR2). This IR focuses on training and its targets have been exceeded – 39,046 person hours of training in NRM and 24,262 people trained (ranging from the poor resource-dependent people to officials engaged in co-management) to incorporate climate change resilience in their decision-making. Highlights of capacity building in year 2 include: establishing the financial and entrepreneurial literacy course (largely for poor illiterate women) with 183 courses/centers started in year 2, with 3,604 participants and 336 graduates thus far; workshops and drafting of curricula on climate-resilient NRM for higher education institutions; and the development of customized training for CMO and Union Parishad members to improve services delivery and their understanding of relevant policies and laws.

Improvements in governance (IR1) are partly outside the control of the project. In this year, there has been progress in the analysis of nine policy areas; in particular, the reforming of wetland leasing policy as part of a work group in collaboration with GIZ, UNDP and other development partners. The inclusion of CMO representatives in Union Parishad Standing Committees was also accepted and implemented. At present, 59 Union Parishads have included CMO members into Standing Committees.

Requests to expand and formalize additional permanent sanctuaries were submitted to MOL for Baikka Beel sanctuary in Hail Haor (98 hectares) and for swamp forest/thicket sanctuaries in Hakaluki Haor (544 hectares). Requests to reserve a total of 42 jolmohals and 112 plots of land for wetland sanctuaries to be brought under community based co-management have been made to MOL. The Ministry has responded favorably verbally, and is continuing with its formal processing.

Strengthening demand for good governance and protecting community rights are also objectives. In year 2, more requests for action by higher tiers of government have been made by CMOs than were targeted. Also, Co-Management Committees (CMCs) and associated community patrol groups (CPGs) monitored for illicit felling and poaching. In addition, a mass movement took place in Hail Haor (with backing from local government) against illegal encroachment and conversion of seasonal wetland commons into large aquaculture farms by wealthy businessmen.

Strengthening climate-resilient NRM (IR3) is taking hold in six new sites. A CMC for Nijhum Dwip National Park (16,352 hectares) has been officially formed, and there has been significant progress establishing co-management in three other sites. A total of 102 new villages are engaged in the process of establishing co-management (the original target of 150 was unrealistic based on the numbers of villages found to be actually using these sites). More villages will be added in year 3 with new sites.

In existing sites, CO₂ sequestration and biophysical conditions improved through plantation activities with just over 1.29 million dune-stabilization plants and tree saplings planted. More than 10,600 beneficiaries were involved in planting approximately 297,000 fruit trees and fuelwood trees on public lands and homesteads. A further 285,000 mangrove saplings were

planted to stabilize inter-tidal coastal areas adjacent to the Sundarbans, and 411,000 dune stabilization plants were placed in eroding coastal areas. In addition 298,000 seeds of Garjan and Dhakijam (declining forest canopy trees) were planted by school children in the Cox's Bazar region. . These activities, in total, this will improve biophysical conditions in 226 hectares as the trees mature.

Participatory Climate Vulnerability Assessments and resilience planning were facilitated in 204 villages, and consolidated into sets of priorities for 26 landscape areas. These are direct inputs into ongoing preparation of site level management plans. Management plans are in the process of being developed for five forest PAs and their landscapes with the concerned stakeholders, and for three community-managed wetland sanctuaries. Although progress was made in introducing entry fee collection and revenue sharing in the targeted three sites, infrastructure development and procedures (compliance to USAID's 2013 construction compliance criteria) has taken longer than expected. The leveraging of resources from private sector, projects/government and communities has continued and is ahead of target with US\$185,101 leveraged in the year.

A major focus has been on gearing up livelihoods activities to increase sustainability and climate resilience (IR4). To date 18,931 beneficiaries received training for improved livelihood activities. The majority of these involved aquaculture and horticulture, which are seasonal. Most beneficiaries trained during year 2 had not completed a production cycle in this year (for example aquaculture enterprises stocked fish but will harvest them only at the end of calendar year 2014). Nevertheless, an estimated 16,454 resource-dependent households started improved or new climate-resilient livelihood enterprises. Horticulture enterprises which were completed in the 2014 January-June cycle, increased incomes in 2,172 households (11,160 individuals including 6,500 women) living near PAs by an average of about US\$ 95 per household compared with the same period in 2013, resulting in an estimated total benefit of just over US\$ 160,000.

CREL also supports wetland communities to conserve and restore wetlands, through establishing and managing sanctuaries, as well as habitat restoration and sustainable fishing practices. Even though planned habitat-management interventions were postponed to the 2014-15 dry season, and community organizations still lack rights over most water bodies within the main haor wetlands in the northeast, the fish catch in Hail Haor per hectare increased slightly to 15 kilograms per hectare. Higher catches of fish, valued at approximately US\$ 300,000, can be attributed to continued co-management in one major site. (Other wetland fishery impacts cannot be assessed until Years 3 and 4). In addition at least 3,700 fisher households in Hail Haor (about 18,800 people) achieved on average slightly higher incomes from fishing.

The following sections (3.1, 3.2, 3.3 and 3.4) describe the accomplishments, deliverables and findings of year 2 activities as presented in the Year 2 Work Plan per component.

3.1 Component 1: Improved Governance of Natural Resources and Diversity

In Component 1, CREL is working with the GOB and CMOs to build their capacity in climate change resilience and sustainable co-management of wetlands and forests in targeted landscapes. Under this component, CREL is working to: promote improved policies and strengthen policy support for co-management; build the capacity and understanding of NRM in government agencies and local government; and strengthen the capability and governance of co-management organizations.

Policy reforms are needed to secure enduring co-management rights and responsibilities. Policy advocacy facilitated by CREL and involving co-management stakeholders will contribute to long-term efforts to achieve sustainable NRM and climate-resilient development. An improved enabling environment for legal and policy reform is essential to ensuring that co-management and climate change resilience will have legal and strategic backing and institutional ownership. Based on a comprehensive policy gap analysis, the CREL team targeted and began advocating for changes in 14 key policy issues to create a more conducive legal and policy framework for sustainable co-management and climate-resilient ecosystems.

Key target: three laws, policies, agreements, or regulations addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially submitted as a result of USG assistance

During year 2, CREL's regular discussions with concerned GOB departments resulted in increased support for CREL mandated reforms. The MOEF, MOFL, and MOL have proposed and/or accepted, in principle, policy reforms or amendments related to co-management in forests as well as wetland leasing and management. CREL has also facilitated various meetings, outreach, and exposure visits to improve understanding of co-management and garner greater support from local, regional and national stakeholders. These activities have included: consultations with experts and senior officials; documentation and analysis of best practices for improving community-based adaptation, resource management, and governance; coordinating and partnering with other projects to avoid duplication and improve outcomes; and forming a multi-project multi-donor Working Group to influence the reform of wetland policies.

Component 1: Expected Results

- Strengthen national framework for PA management
- Prepare action plans to address barriers to CMO sustainability
- Climate change considerations and land use planning integrated into PA management plans
- Enhanced NRM/biodiversity coverage

A brief summary of key accomplishments and outputs for year 2 are identified below. The sections that follow provide more detailed descriptions of various activities and results, based on the targeted activities outlined in CREL's Year 2 Work Plan.

Key accomplishments and outputs include:

- The CREL team made progress with the MOL to reserve a number of jolmohals for management under co-management frameworks. The MOL ordered district administrations to halt tender bids in those jolmohals that have not already been leased to other parties.

- With CREL Team support, local wetland CMOs in Hail Haor campaigned as part of a citizen-led movement to evict illegal settlements and aquaculture enterprises that had been encroaching on floodplain commons and public lands. They submitted a petition to Moulvibazar District administration to end non-transparent private leasing and aquaculture encroachment, and took direct action when there was no response.
- Based on the CMO assessment conducted in Year 1, CREL staff developed milestones for organizational, financial and functional sustainability, and supported 31 CMOs to prepare action plans for building capacity, mobilizing resources and monitoring performance outcomes.
- Links between CMOs and Union Parishads have been strengthened. Requests were submitted, accepted and implemented, with CMO members included in Union Parishad Standing Committees. This has resulted in improved coordination between CMOs and Union Parishads, including decisions on funding opportunities and road and embankment plantations.
- Training courses and manuals developed for local government institutions have increased support for policy reforms as well as understanding of PA-related co-management and climate change adaptation policies and legislation.
- Regional FD officials, Upazila Parishads and local leaders supported establishment of co-management in four new sites and the re-organization of existing community-based organizations (CBOs).
- Responding to a FD request, CREL facilitated the drafting of a co-management rule that combines improved revenue sharing systems, co-management, and Sundarban-specific NTFP revenue sharing under the single framework of the Wildlife Act 2012.
- With USAID support, CREL was instrumental in the formation of a Working Group to review the 2009 Wetlands Leasing and Management Policy. This Working Group offered recommendations for policy changes, and drafted an amendment for dialogue with eventual submission to MOL and MOFL.
- CREL introduced CMC registers in forest PAs to regularly monitor illicit felling, poaching, and human-wildlife and land-use conflicts. Discussions with People's Forums (PFs), Village Conservation Forums (VCFs) and CPGs resulted in awareness campaigns and dialogues with the Divisional Forest Offices to increase participatory monitoring measures.
- CREL made a submission to MOL, based on status reports from district offices, to declare a new type of wetland sanctuary to protect swamp vegetation/forest patches in ecologically critical areas (ECAs). These substantial areas are already being protected by VCGs, but without formal recognition.
- CREL submitted to MOL a proposal to expand Baikka Beel sanctuary which will improve water retention. This proposal is agreed in principle and in process with MOL.

As noted, the CREL team has targeted and advocated for changes in 14 key policy issues (i.e., policies, laws, rules and/or guidelines). CREL believes that reforms in these specific policy issues will result in a more conducive legal and policy framework for sustainable co-

management and climate-resilient ecosystems. A summary of policy-related achievements in year 2 and next steps (or stages) is provided **Table 2** below.

Table 2: Summary of IR 1 Policy-Related Achievements (Up to September 2014)

Sl.	Identified policies, laws, rules or guidelines	Stage 1: Analyze	Stage 2: Draft	Stage 3: Submit	Stage 4: Approve	Stage 5: Implement
P1	Wetland leasing policy '09	Completed	Finalized			
P2	Guidelines for permanent wetland sanctuaries	Completed	ongoing			
P3	Guidelines for wetland co-management	Content analysis started				
P4	Additional permanent wetland sanctuaries	Done	Done	Two sets of proposals submitted to MOL		
P5	ECA policy/rules on co-management for NRM	MOEF consulted				
P6	Improved revenue sharing for forest PAs	Completed	Ongoing			
P7	Declaration of new forest PAs (i.e., Ratargul and Inani)	Identified Inani proposal finalized	Draft depends on FD support			
P8	Revised CMC structure in forest PAs	Ongoing				
P9	CMO representation in UP Standing Committees	Done	Done	Done	Done	Done
P10	Forest Protected Area Rules	Ongoing (with P6)				
P11	NTFP revenue sharing in Sundarban	Ongoing (with P6)				
P12	Climate change inclusion in Union Development Plans	Information exchange processing				
P13	Designation of Ramsar sites and/or ECAs	Candidates identified				
P14	Legal instrument formalizing fish sanctuaries and co-management	Preparatory tasks started				

3.1.1 Convene and Facilitate National and District-level Committees for CREL's Implementation

The GOB will form the steering and technical committees at the ministerial and departmental levels, after approval of the TPP. MOL recently approved the formation of a District Wetland

Committee in Moulvibazar to improve wetland governance, comprising local government institutions (LGIs) and wetland CMO representatives. On May 26, 2014, MOL instructed the Deputy Commissioner in Moulvibazar to include Resource Management Organization (RMO) and VCG representatives (inclusion of VCG representatives is still in progress) in the Moulvibazar District and seven Upazila Jolmohal Committees, the key decision-making bodies for leases. This was in response to CREL's proposal to strengthen linkages between CBOs, leaseholders and the government, in order to help increase local administration interest in conserving wetlands and reduce the risk of misreporting to the land administration by groups with vested interests

Although the CREL team initially encountered delays in forming the District Level Coordination Committee due to the pending approval by the MOL, intermediary actions were taken to coordinate with local officials and keep them informed about CREL activities. CREL staff helped to facilitate meetings with the concerned Deputy Commissioners in its four regions, and initiated monthly consultations on CREL approaches through the existing NGO coordination meetings with Upazila administrations in Cox's Bazar, Northeast and Southwest regions. This has increased opportunities for CREL beneficiaries through leveraging support and best practices.

3.1.2 Adjust Policy, Plans, and Rules for Co-management and NRM

Reform of the Wetland (Jolmohal) Leasing Policy 2009 remained a key focus and top priority. The aim has been to support and otherwise facilitate MOL ownership of a revised policy that will assure the sustainability of wetlands as well as fishers' livelihoods.

With support from USAID, CREL was instrumental in forming a Working Group on wetlands, and developing a policy amendment work plan. Comprised of GIZ, USAID, ActionAid Bangladesh, IUCN, CNRS, UNDP, and BRAC University, this Working Group mapped out chronological steps for achieving GOB adoption and passage of a wetlands amendment. The WBRP and CREL created a sub-group to analyze lessons learned from 12 past projects for achieving sustainable NRM and securing long-term user rights for CBOs. This sub-group prepared a synopsis of issues and recommendations which was then finalized by the Working Group. It has been discussed with the Director General of the DOF, and is due to be discussed with the Secretary and MOL. This enables CREL to learn from their insights about upcoming challenges and opportunities for amendment, and to explain the proposed re-orientation of leasing in favor of wise-use and co-management, rather than competitive leasing aimed at maximizing short-term revenue collection and patronage.

Consultations with MOL and DOF were held to develop a legal instrument and guidelines on wetland sanctuary management. CREL completed the first draft of a guideline for establishing and managing permanent wetland sanctuaries.

CREL also provided suggestions to the MOEF and IUCN for specific reforms in the current Tanguar Haor administration to increase inclusiveness and wise-use of wetlands. MOEF and IUCN Bangladesh requested that CREL undertake a governance study on

“There was so much to learn about how the local legal system works as well as forest laws, wildlife conservation, and environmental policies... I thought I would never be able to learn all this. Now we can take this information to people’s courtyards to improve governance. (*Jahanara Azam, Dulahazra Union Parishad Standing Committee member*).

Tanguar Haor ECA and Ramsar Site. The Community Based Sustainable Management of Tanguar Haor Project (supported by SDC and implemented by IUCN-CNRS) has had co-management and livelihoods activities in this large and internationally significant wetland since 2006. However, co-management in Tanguar Haor has been less effective than expected. A multi-tiered co-management arrangement from village groups to a national committee already exists with government budgets and paid guards, but the project has failed to secure sufficient local support. The governance study results focused on understanding constraints, institutions, and the type of support needed for future reforms that should be reflected in a Tanguar Haor Act/Rules that are being drafted. The analysis and recommendations were shared in a stakeholder consultation meeting with the MOEF, DOE, DOF and IUCN.



Photo 1: CMO members worked in groups to prepare suggestions for PA Co-management Rules, facilitated by the Divisional Forest Officers of the Chittagong Circle in September 2014.

CREL is working on reforms for co-management in forests and PAs through drafting Protected Area Rules under the single framework of the Wildlife Act 2012. This will update rules and guidance on co-management, and improve revenue sharing systems for Reserved Forests and the Sundarbans. A legal consultant is working (since June 2014) to develop the framework and directives in consultation with senior officials of the Forest Department and CMO members.

A workshop on Forest Protected Area Rules was also held in Cox’s Bazar, with 64 participants from Chittagong and Cox’s Bazar. Participants were FD officials, CMO office-holders,

representatives from PF Executive Committees, Nishorgo Sahayaks, and VCFs as well as members of the Tripura ethnic community. The directives being prepared will conform with current laws and regulations governing forest management and PA protection, including threats to ecosystems, fragile/vulnerable areas management, co-management support, compensation for damages, and innovative partnership funds provisions for PES (payment for environmental services) and climate resilience.

3.1.3 Provide Training to Upazila Parishad Staff and Union Parishad Members on Environment, Forestry and Fisheries Policies, Regulations and Laws; Coordination Meetings and Visits

In June 2014, two USAID projects collaborated on Union Council capacity-building. At CREL's request, the Strengthening Democracy and Local Government (SDLG) Project's training programs in Chandpai, Chila, Nishanbaria and Burigoalini areas (which border the Sundarbans) included 12 CMO members co-opted into five UPs. The participants are serving on UP Standing Committees on environment, social welfare, agriculture, women empowerment, fisheries, health, and finance.

The SDLG training focused on UP structure and Standing Committee duties, monitoring tools, stakeholder facilitation, small grants planning, open budgets, assessing taxes and strategizing on local taxation, community service and basic book-keeping and audits. CREL staff offered a training session on climate change vulnerability and CREL's Participatory Climate Vulnerability Assessment (PCVA), the importance of PA management for climate resilience and how co-management institutions are formed and structured.

CREL prepared two training modules respectively for Upazila officials and Union Councils, including CMO representatives in the Standing Committees. This explained critical forest, wetlands, environment, climate change and gender-related laws and policies. The training module included real-world cases, scenarios and provisions, and emphasized the importance of good governance in the management of forests, wetlands and ECA resources as well as ways of addressing climate-related issues and resilience delivered by relevant government and non-government trainers. An environmental lawyer conducted field consultations with CMOs, government departments, and Union Parishads in Sylhet and Cox's Bazar regions, developed a two-day training course, and conducted one course so far (see activity 2.2 for details).

3.1.4 Facilitate Inclusion of Co-management Issues and Representatives in Union Parishad Standing Committees for Improved NRM

Formal inclusion of CMO members in Union Parishad Standing Committees continues to expand. CMCs and PFs have requested that their members be placed as Standing Committee representatives in 59 different Union Parishads. Thus far 109 individuals have been approved by Union Parishad Chairs as CMC representatives in Union Parishad Standing Committees (see status in **Table 3** below). Most placements have been in Standing Committees that cover the following areas or issues: environment-forest, disaster management, agriculture and fisheries, and women's empowerment. Standing Committee placements are increasing the scope for better information sharing in response to threats, conflicts, and gender-based violence (GBV), as well as greater coordination on initiatives for improving PA conservation, NRM, and gender equality. In some Union Parishads, CREL project activities that required Union Parishad approval were expedited by frequent interactions between Union Parishad and CMO members (e.g., roadside plantations).

Table 3: Status of CMO Representation in Union Prishad Standing Committees

Sl.	Region	Number of Union Parishads	Number Accepted as Members
1.	Chittagong Region	13	23
2.	Cox's Bazar	9	24
3.	Northeast Region	17	27
4.	Southwest Region	20	35
	Total	59	109

Together Union Parishad Chairs and CREL have facilitated quarterly Union Parishad Standing Committee meetings, providing information on climate change, NRM, PA co-management, and CREL activity updates. As noted in 1.4, CREL and SDLG also collaborated on a UP training program in June, and CREL conducted one training program on policies and legislation.

In addition, CREL participated in SDLG's national conference "Strengthening Upazila Local Service Delivery," to learn more about the roles and responsibilities of local government institutions. An overarching challenge remains the intensive interventions needed if Union Parishads and higher tiers of government are to improve service delivery, accept devolution mechanisms and achieve better resource allocations (those that can rise above local power plays). While CREL will continue to help facilitate Union Parishad-CMO interactions, the scope of these interventions may have to be limited to increasing the understanding and capacity of Standing Committee members in terms of climate change, PA-sensitive planning processes, and context-based informational exchanges/discussions to support specific landscape area conservation and development.

3.1.5 Implement Local Action Plans to support Union Parishads and CMOs use of Climate Change Information in NRM Planning and Decision-making.

CREL held discussions with the multi-donor Comprehensive Disaster Management Program (CDMP) Phase II to pursue opportunities for disseminating climate and disaster information through CREL-supported CMOs and communities. CDMP will link these CMOs with the Department of Disaster Management and LGIs that host Disaster Management Information Centers (DMIC) and disseminate the Weather Board's mobile-phone early-warning and forecasting service using occasional text messages and Interactive Voice Response (IVR) numbers. CREL provided CDMP its CMO contact database (in July 2014) for inclusion into their DMIC database. CREL will monitor recipient response in this first-round enlistment, and draft climate information guidelines for the users.

CREL initiated discussions with seven Union Parishad chairs and secretaries on integrating climate change information in the planning process for their annual development plans, based on guidance from the SDLG project on how and when to best help LGIs. Union Parishads review

their annual work plans and budgets in June, and CREL seized this opportunity to help them identify options for climate-sensitive planning. Typically, most Union Parishad annual plans have budgets and funds that are allocated by the Union Parishad chairs to selected group members for construction activities. Unfortunately, however, most Union Parishad Standing Committee members lack the capacity to effectively contribute to Union Parishad-level planning by raising issues or advocating for local needs and demands to their chairs and committees. With this in mind, and following suggestions from SDLG, CREL developed session plans to work with at least 10 Union Parishads in Khulna and Cox's Bazar next year.

Sub-IR.1.1: Strengthened Legal and Policy Framework for Co-Management
30 legally defined public land units assigned long-term for co-management

To achieve this target, the Governance team is working simultaneously with the MOL, district administrations and the FD to designate wetland sites (jolmohals) and forest PAs for co-management. This focuses on jolmohals where local community's leasing rights expired and new forests and waterbodies sites are not yet under co-management. In the project landscapes, CREL is working in new sites agreed for co-management to organize appropriate institutions of local stakeholders. The CREL Governance team collaborates with the CREL Landscape team (Component 3) who work with CMOs to develop management plans. (Activities related to Component 3 are described in section 3.3).

3.1.6 Secure Government Endorsement of Public Lands for Co-management

CREL secured greater governmental support for co-management and community-based lease rights in year 2. Preparations were made with the FD for establishing co-management for four new sites: Ratargul Swamp Forest (a potential PA), Tengragiri Wildlife Sanctuary (WS), Hazarikhil WS, and Nijhum Dwip National Park (NP). Thus far, co-management has been formally established in Nijhum Dwip NP. Moreover, the requests made by MOFL and submitted to MOL (to reserve 32 jolmohals) as well as MOEF's request to MOL (to handover 10 jolmohals in Hail Haor and Hakaluki Haor for communities under co-management) are finally starting to gain traction.

Reserving jolmohals for CBOs would ensure sustainable fisheries and livelihoods for local communities, either by complementing their existing protection of nearby fish sanctuaries (Hakaluki Haor VCGs) and/or by restoring previous sustainable practices and smaller sanctuaries operated by RMOs in the past (in Hail Haor). In Q3, the Secretary of MOL re-invigorated the process of handover to CMOs by requesting that Deputy Commissioners (DCs) submit their final status reports on the 32 jolmohals in Hail and Hakaluki Haors. In parallel (and largely a result of the TPP), the DOF sent again the list of 32 water bodies to MOL. Inter-ministerial meetings were held on the DOF projects, and a status request was sent by the MOFL. A series of meetings were also held with MOL regarding the reservation of jolmohals linked with CREL. Following repeated instructions from the MOL to District Offices, DCs sent five lease status reports. This resulted in MOL issuing notifications to concerned DCs to stop tender calls for "lease free" and

“lease expiring” jolmohals as well as to stop commercial leasing of ecological significant water bodies in Hail Haor

In May 2014, CREL submitted a proposal to the MOL for expanding the boundaries of Baikka Beel, the community-managed permanent sanctuary in Hail Haor. In response to this proposal, the MOL asked for a detailed report from the DC in Moulvibazar. The DC made enquiries and the Upazila Nirbahi Officer, Srimongol, sent a detailed report endorsing the necessity of expansion of the present boundaries of Baikka Beel as proposed by CREL. If accepted by the MOL, 23 land units (with a total area of 98 hectares) would be formally recognized under co-management as part of the sanctuary. Ten land units are already being informally protected as part of the sanctuary. Expanded formal recognition secure the integrity of Baikka Beel Permanent Sanctuary, by expanding its effective area about 29 hectares (to approximately 200 hectares in total) and protecting significant adjacent water bodies which are crucial for maintaining water depth in the dry season.

With CREL support, Hakaluki Haor VCGs requested the MOL to formally designate and recognize as sanctuaries the swamp thickets and forest patches around various fish sanctuaries that they have been protecting and helping regenerate in recent years. CREL has submitted a proposal to MOL to designate 89 land units as “swamp sanctuaries” amounting to 544 hectares. MOL has provided instructions, and requested a status report from the DC. See **Table 4** below for a summary of the land units proposed.

CREL is also working with RMOs to regain community access rights to seasonal wetland areas in Hail Haor. In May, members from eight Hail Haor RMOs, locally elected leaders, respected elders and about 2,000 people (who live adjacent to Hail Haor) jointly rallied against the loss of use-rights and land-grabbing of seasonal wetland commons (khas land areas) for large-scale aquaculture. They created a “human chain” and submitted a memorandum to the DC’s office in Moulvibazar. The memorandum requested that action be taken against encroachment and the reclassification of water bodies from community used and managed wetland areas into large-scale aquaculture enterprises operated by local elites and their business associates. RMOs and villagers in Hail Haor reduced wetland encroachment by supporting the eviction of illegal fish farms and structures throughout the summer. In September, eight illegal fish farms were removed through collective action, with support from LGIs.

Table 4: Public Land Units and Area Coverage of Water Bodies Proposed for Wetland Sanctuaries

Proposals Submitted to MOL	Land units	Acres	Hectares
Jolmohals not leased and proposed for handover to RMOs	32	1491.29	603
Proposed jolmohals for sustainable fishing under rights to VCGs	10	1967.15	796
Baikka Beel sanctuary expansion	23	243.16	98
Proposal to formalize swamp sanctuaries in Hakaluki Haor	89	1344.68	544

3.1.7 Strengthen the Capacity of Co-management Institutions

Baseline assessments of CMOs undertaken during year 1 continue to guide CREL's targeted actions to strengthen the capacity of co-management organizations, based on following site-specific action plans. These plans identify weaknesses and outline tasks for improving CMO capacity, performance, and sustainability. In year 2, the CREL Team prepared a framework to re-define CMO (co-management bodies and CBOs) architecture for wetlands, forests and ECAs. This was shared with all the field implementing partners, including the Arannayk Foundation and IUCN on December 30, 2013. This document provides clear guidance on how to link community and government stakeholders to ensure sustainable management and effective lines of communication and authority.

Key issues for forest CMCs remain:

resource mobilization, problems with poaching and human-elephant conflicts, and the need for CPG members to derive benefits or enhanced livelihoods in ways that help to compensate for patrol duties.

Key issues for most wetland CBOs remain:

lack of clear rights over public waterbodies which, so long as they are under processing with the MOL, are over exploited, as well as government committees with overlapping responsibilities and limited representation from local communities.

In regular CMC, RMO and VCG meetings GOB officers and community people discussed and affirmed their commitment to strengthen efforts for the conservation and protection of natural resources, to address climate change and vulnerability through adaptation, develop landscape plans, build resiliency in ecosystems, and to control degradation of lands and encroachment. Community people in their regular PF and VCF meetings also discussed the importance of forest protection, problems of illegal sapling cutting (which occurs frequently at the start of winter for betel leaf farms), and ways to reduce dependency on forests. In addition, strengthening CPGs through reorganization, reform and alternative livelihoods were major agenda items for CMC meetings. CPGs remain the main mechanism for protecting forest PA resources.

CREL staff developed a set of criteria for defining and measuring organizational and functional sustainability of co-management organizations, based on assessment tools used in year 1. These criteria informed capacity building and action plans for each CMO, which have been shared with the CMOs. CREL staff then worked with 31 CMOs (23 forest CMOs and eight wetland CMOs) to develop customized action plans. These plans include resource mobilization and fundraising plans, which the CMOs discussed in their regular committee meetings. In response, CMOs formed sub-committees to review their plans and present these to their members (e.g., CMCouncil, RMO general members, and Upazila-level committees in wetlands). Officers from government agencies who attended two regional workshops also reviewed and provided input and feedback on the action plans, assumed the responsibilities of their roles, and collaborated in CMO capacity-building activities.

In two separate workshops held in Chittagong and Dhaka in September 2014, the Chief Conservator of Forests (CCF) of the FD affirmed his support for strengthening the co-management process in Bangladesh, in order to conserve biodiversity and natural resources in

PAs. He also acknowledged the sincere efforts of CPG members in co-managed PAs along with FD's field-level staff for resource protection.

During year 2, the Conservators of Forests of Chittagong and Khulna Divisions and their District Forest Officers (DFOs) helped to strengthen the capacity of CMCs in their areas and encouraged strong collaboration between their staff and community representatives for the protection of forest resources. The CMCs agreed to support more effective guarding to prevent illicit felling through targeted activities and training. For example, in the Chittagong region, Dudpukuria CMC formed a sub-committee to organize advocacy actions aimed at stopping the operation of tobacco processing stoves in the area, which are fully dependent on forest fuelwood.



Photo 2: Meeting with ethnic community and tea estate workers to sketch resource maps of Hazarikhil WS, Fatikchari, Chittagong

In addition, CREL teams supported the strengthening and reformation/reorganization of existing CMOs, helped to review and update VCF membership and ECA committees, and facilitated targeted discussions and training activities. In the case of VCFs, memberships were reviewed and inactive or absent members were replaced in all four regions. VCF Executive Committees were then reformed to increase capacity and strengthen their ability to conserve forests and natural resources. Other examples include the following:

- Upazila Nirbahi Officers of Sylhet Sadar and Rangunia Upazilas and DFOs of Sylhet Forest and Chittagong North Divisions worked together to reform Khadimnagar, Dudpukuria and Dhopachari CMCs (Councils and Committees) when their tenure expired. Reorganizing CMCs has generated new momentum for conservation and protection actions in these two PAs.
- The general membership of Baragangina RMO (the CBO responsible for Baikka Beel Sanctuary in Hail Haor) was revised and enlarged in the presence of Upazila Fisheries Officer, nearby Union Parishad Chairmen and local leaders, using a participatory approach. This has helped address the problem of a declining membership that was not effectively representing the concerns or issues of the local communities.
- ECA committees dominated by members from government departments were identified at the Upazila and Union levels. Steps will be taken to increase the numbers of representatives from VCGs and other community stakeholders.
- In the northeast, PFs shared drafts of capacity-building plans with CMC members to receive comments and feedback.

- Twelve VCFs were assisted in requesting registration with the Department of Cooperatives and three registrations were completed. This action depends on the demand of the VCFs, some are already registered, and others that are not focused on livelihood enterprises or establishing revolving funds may not see the need to pursue this administrative process.

3.1.8 Form CMOs at New Sites

In year 2, CREL successfully established co-management in Nijhum Dwip NP and completed formation of VCFs and PFs in Tengragiri WS and Hazarikhil WS. By the end of September, 22 VCFs and CMC-PFs were formed in Nijhum Dwip, 23 VCFs and a PF were formed in Hazarikhil WS, and 19 VCFs and a PF were formed in Tengragiri WS.

On the Halda River, in the stretch around the river fish sanctuary, 31 fisher groups were identified and a census completed. This revealed that a total of 1,516 fishers (mostly spawn collectors) are active in CREL's target area, covering parts of three Upazilas (Hathazari, Rawzan, and Boalkhali) and the Chittagong City Corporation.

Moreover, several meetings were held with local stakeholders of Ratargul swamp forest and adjacent wetlands. Information was also collected on its features, socio-economic resources and climate vulnerability.

3.1.9 Declaration of Forest PAs, ECAs and Permanent Sanctuaries

A proposal to designate a new category of wetland sanctuary was introduced by CREL. This will cover swamp forests and regenerating patches of swamp thickets located on public lands (khas) surrounding jolmohals, and fish sanctuaries, initially in Hakaluki Haor. Although many of these areas lack formal protected status recognition, they are being protected by community organizations.

With CREL support Hakaluki Haor VCGs requested special protection for swamp thickets and forest patches (as noted in 1.6). Many of these areas are naturally-rich fish nurseries and sanctuaries, and were degraded due to over-harvesting by local people. They also provide important habitats for numerous migratory and resident birds in winter. CREL consulted with the local ECA office and the MOL, requesting special protection in order to prevent future harvesting in these sensitive and ecologically important areas. CREL has submitted a proposal to MOL to designate 89 land units as "swamp sanctuaries," covering 544 hectares. The District Office provided the status report to MOL in September.

After discussions with the DOE and district administrations, the potential for declaring new ECAs is considered to be limited. However, it is clear that existing ECAs require a clearer participatory co-management framework – one which is pro-poor and actively involves VCGs in

higher decision-making bodies. Increased support for community-based inclusion will result in better co-management, especially in the places where CREL is working in coordination with the ECA Management Offices and has initiated partnerships for bio-physical improvement.

Scope for declaring new forest PAs was also discussed with the FD. The Inani NP declaration proposal (previously prepared by the Arannayk Foundation) was followed up by CREL with the FD. CREL also facilitated discussions declaring Ratargul Forest as a PA and the FD completed field data collection. CREL has offered to provide further technical support, including socio-economic data.

Several candidate Ramsar sites that meet the criteria for wetlands of international importance have been identified among CREL working areas. These include: Sonadia ECA, Nijhum Dwip NP, Hail Haor and Hakaluki Haor.

Discussions with MOEF have also focused on participation in various scientific meeting and conferences, and the need to present reports covering the status of Ramsar sites in Bangladesh. At the request of the Ramsar Convention Secretariat, CREL reviewed country status reports prepared by the FD on the Sundarbans and Tanguar Haor, and submitted a nomination request to the MOEF for participation at the Ramsar Conference of Parties (COP). The Secretary of MOEF has agreed to attend the Ramsar pre-COP in November. CREL believes that this will provide boost advocacy efforts and help to initiate new site designations.

3.1.10 Conduct Inventory and Update Wetland Record

Hail Haor land records were matched by CREL with current land use and leasing practices. This will help to create a detailed inventory of usage in the dry season.

A proposal for collaboration between CREL, MOEF and Asia's MFF Program was placed before the MFF National Committee. CREL was asked to provide technical and policy directions by preparing a position paper for the Committee, based on the lease-record inventory of open-water channels and chars in the southwestern region. Both CREL and MFF work in this region.

Sub IR 1.2 Increased Demand for Better NRM

30 Institutions requesting actions from higher governance tiers for better NRM

3.1.11 Provide Training to CMOs and Local Governments (Union Parishads)

Nishorgo Sayahak refresher trainings were held in all four regions. These included entrepreneurship and financial literacy training and savings and loans group (SLG) formation as well as information on forest fire prevention, hill cutting, and landslides. This information will be conveyed to VCFs.

CREL staff members conducted and/or attended a series of relevant training programs for CMOs in every region. CREL staff conducted training programs on climate change adaptation and mitigation for CMC and VCF members in the 4 CREL regions. CPG members in the northeast region received training on laws and regulations related to forests, environment and wildlife laws (presented by FD beat officers). CREL staff in Cox's Bazar region received ToT training on ecosystem services and functions, and began training local level government officers and CMC members.

Other examples of training programs for CMOs undertaken in year 2 include the following:

- CMC members, including FD personnel in Kaptai NP (two CMCs), received training from the FD and CREL staff on entry fee and revenue sharing mechanisms to prepare for the start of entry fee collection.
- CREL staff conducted training programs on Climate Resilient NRM and Climate Change Adaptation and Mitigation for Teknaf CMC and 25 VCFs in Cox's Bazar, about two-thirds of the 665 participants were women (436).
- In the Cox's Bazar region, CREL facilitated 10 VCG meetings and discussions about the project's goal, objectives and expected outcomes, as well as topics related to SLG formation and livelihood beneficiary selection.
- Training programs on capacity building of CPG members were facilitated in the Sylhet region to raise awareness about roles and responsibilities, the Wildlife Act 2012, and the reporting of illegal activities.

3.1.12 Develop Participatory Monitoring and Reporting Systems for Threats and Other Key Indicators for Forests and Wetlands

CREL drafted a concept paper on participatory monitoring and reporting systems for threats in the southwest region, based on a set of participatory assessments and grassroots dialogue with the FD on poison fishing. With FD cooperation, CREL staff also conducted detailed studies to identify the people illegally extracting fuelwood, grasses, saplings, bamboo shoots and other significant plant species from forest PAs. More than 2,000 people were identified and verified by the beat offices. This helped to initiate a dialogue between CMOs on the need for alternative measures and diversified livelihood opportunities.

Focus group discussions were also conducted in different regions (four PFs and one CMC in northeast, two in Khulna, and four in Chittagong) to identify how CMOs and CPGs could independently monitor threats and biophysical conditions. Based on these consultations, tools are being developed and an initial training was held for 12 CPGs in northeast.

With CREL support, CMCs are documenting and recording illicit felling, poaching and human-wildlife conflicts in all regions. This information is regularly being discussed in CMO and CPG

meetings, and has resulted in local FD awareness campaigns supported by CREL staff in Cox's Bazar, Chittagong and the northeast regions. This information is also providing a basis for CREL to develop detailed site-based monitoring frameworks that will help strengthen responses to illegal activities and forest protection. For example: in Cox's Bazar, a considerable amount of fuelwood was seized from collectors at Chainda Beat; valuable illegally felled timber trees were seized at Fashiakhali Beat and Medhakachhapia Beat (forest cases were filed in those incidents); and, in Chittagong, a special task force has been deployed to protect Dudhpukuria PA and to help support monitoring efforts.

3.2 Component 2: Enhance Knowledge and Capacity of Stakeholders

Component 2 focuses on training as the primary mechanism to strengthen capacity for co-management implementation, improved NRM and climate change resilience. It supports Components 1, 3 and 4 and contributes to the overall goals of CREL.

During year 2, the component focused on climate change adaptation and mitigation and climate-resilient NRM for CMOs, VCF members and local government officials. These trainings were conducted based on the findings from the training needs assessment undertaken during year 1. CREL staff also developed training curricula, modules and manuals on the following: Entry Fee Revenue Sharing Mechanisms, Financial and Grants Management, and Eco-Guide Development.

Component 2: Expected Results

- Complete assessments for GOB and CMOs (knowledge/institutional capacity)
- Offer trainings and cross-visits for key stakeholders
- Increase GOB capacity on NRM, biodiversity, and climate change adaptation and mitigation
- Strengthen technical, organizational, and financial capacity of CMOs for long-term sustainability
- Periodic assessments of biodiversity, climate change threats, key species and ecosystem valuations

A brief summary of key accomplishments and outputs for year 2 are identified below. The sections that follow provide more detailed descriptions of various activities and results, based on the targeted activities outlined in CREL's Year 2 Work Plan.

Key accomplishments and outputs include:

- In total, 28,909 persons (VCF, CMC members and local government officials) were trained on climate change adaptation and mitigation, climate-resilient NRM and diversified climate-resilient livelihoods.
- A flip-chart on climate change and NRM issues was developed for use with VCF members. Based on field testing and feedback from regional staff, the flip-chart was improved, revised and finalized, and then printed at the end of year 2.
- Based on review of issues faced in field sites by a legal consultant, two manuals were developed on Natural Resources and Environment Laws/Acts for Union Parishad (UP)

members and Upazila Parishad members and sectoral officials. One pilot training was held for UP members in Cox's Bazar region.

- Three workshops were held to review existing curricula on climate change adaptation and mitigation and climate resilient NRM, and co-management with universities and government training institutes. Gaps in existing curricula were identified, and a consultant developed draft outlines for six possible curricula. In year 3, the team will work with short-listed institutes on the development of new or improved course modules and curricula, including orientations for faculty, lecturers and instructors.
- CREL's contracted service provider, Friends in Village Development Bangladesh (FIVDB), developed the curriculum, two primers and a teacher's guide for financial literacy learners. This is an 8-day foundation training that was arranged for 20 Literacy Facilitators (Sayahaks). FIVDB also conducted a ToT on financial literacy monitoring and supervision for 25 field-level CREL staff.
- The first primer for Financial Entrepreneurship and Literacy Centers (FELC) was revised based on initial pilot tests for use in the second phase. This will be used in second phase of FELC training, which started in year 2 with around 3,800 VCF members.
- CREL signed an agreement with Tarango, an organization with expertise in SLGs to develop the capacity livelihood beneficiaries who want to become involved in self-help groups. To support this activity, three ToTs were held for field-level CREL staff.
- An overseas study visit and training workshop was arranged in Bhutan for 14 government officials, focusing on climate change adaptation and climate-resilient NRM. The visit was sponsored and facilitated by Bhutan SAARC Forestry Centre with support from CREL.
- A two-day training program on climate change adaptation and mitigation and climate-resilient NRM was held with four batches of local government officials, totaling 84 officers from Chittagong and Cox's Bazar Regions.
- In support of CMO sustainability, workshops were arranged in each of the four regions on the preparation and development of CMO Action Plans with CMO office-holders. Action plans have been developed for all CMCs and RMOs, based on a set of key sustainability criteria and milestones for building CMO capacity. These are now guiding capacity building activities for CMOs.

IR.2 Enhanced Capacity of Key Stakeholders

4,000 people receiving USG-supported training in NRM and/or biodiversity conservation.

3.2.1 Develop Training Curricula, Conduct TOT and Train CMO Members in Natural Resource Management and Biodiversity Conservation

In year 2, CREL staff developed several new curricula, as well as training materials, modules and manuals. These included: Entry Fee Revenue Sharing Mechanisms, Financial and Grants Management, and Eco-Guide Development for CMC members and local government officials.



Photo 3: Training on climate change and NRM for VCF members in Srimongol

The training module on entry fee revenue sharing and collection was developed for CMO members involved in entry fee collections that are being newly introduced for PAs. Thus far, one course has been held in Chittagong Region, with 25 participants (CMC members and FD officials).

A training curriculum and manual were developed on climate change adaptation and mitigation and climate resilient NRM, and revised and improved based on feedback of CMO members and regional staff. Major objectives of these are to improve knowledge and skills, and to build awareness on

climate change and climate-resilient NRM. The idea is to encourage participants to take practical action in support of biodiversity conservation, NRM, and climate change adaptation. Based on this manual, CREL in collaboration with the FD, DOF and DOE arranged a two-day training of 84 local government officials in four batches in Chittagong and Cox's Bazar regions. CREL staff also revised and improved two manuals on sustainable PA co-management for biodiversity conservation and CPGs, which were originally prepared by IPAC.

An Eco-Guide Development training curriculum and module were prepared and revised for local youth and CMC member training programs, building on manuals prepared by IPAC. A total of 77 participants were trained in four batches, from Chittagong and Cox's Bazar regions. The major objective of this training was to improve knowledge and build the capacity and skills of local youth and CMC members so that they can be effective and responsible tourist guides and improve their earning potential.

In addition, CREL developed a flip-chart on climate change and NRM issues, particularly for training VCF members. Again, after testing in the field and feedback from regional staff, the flip-chart was improved, revised and finalized. It is now being printed.

Table 5 provides data on the number of people trained using climate-resilient NRM-related modules and manuals.

Table 5: Participants at Training Courses on Climate-Resilient NRM During Year 2

Major Training Areas	Cox's Bazar			Chittagong			Sylhet and Modhupur			Khulna			Dhaka			Total Male	Total Female	Grand Total
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T			
CC & NRM	917	552	1469	1095	1543	2638	443	332	775	295	170	465	58	5	63	2808	2,602	5,410
CR Livelihood	833	1882	2715	682	548	1,230	1926	2012	3938	2,962	9,897	1,2859	0	0	0	6403	14,339	20,742
NRM & Biodiversity Conservation	55	21	76	46	10	56	183	17	200	138	15	153	0	0	0	422	63	485

Major Training Areas	Cox's Bazar			Chittagong			Sylhet and Modhupur			Khulna			Dhaka			Total Male	Total Female	Grand Total
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T			
Staff ToT on NRM	114	20	134	24	9	33	44	15	59	14	58	72	0	1	1	196	103	299
Net Total	1919	2,475	4,394	1,847	2,110	3,957	2,596	2,376	4,972	3,409	10,140	13,549	58	6	64	9,829	17,107	26,936

Note: in this table the same person attending two courses is counted twice (whereas for M&E indicators that person is only counted once and staff are excluded from the indicators).

3.2.2 Develop Training Curricula and Conduct Training for Union Parishad Members and Upazila Staff on the Current Legal and Regulatory Framework, e.g., Environment Related Laws and Rules and Policies including the Forest Act and Fisheries Act

The capacity and training team provided technical support to develop curricula and prepared two manuals pertaining to natural resources and environment-related laws/acts, rules and policies respectively for Union Parishad members and Upazila officials. The training course focuses on laws/acts, rules and policies related to forests, wildlife, fisheries, wetlands, climate change and NRM, disaster management, co-management and gender issues and associated institutional provisions and the role of the judiciary systems. A consultant contracted by CREL visited the regions prior to developing the training to understand and address underlying gaps between policies and implementation.



Photo 4: Training session on natural resources and environment-related laws and policies for Union Parishad members in Cox's Bazar

To conduct and facilitate the training, the CREL consultant, a forest law expert from FD and a fisheries and wetlands law expert from DOF were involved. The main objective of the training was to improve knowledge and understanding of laws, rules and policies related to NRM and environment so that elected representatives and officials will be able to implement these laws in practice and make use of the judicial system. So far one course has been held for 28 Union Parishad participants in the Cox's Bazar region. In year 3 this training will be rolled out to all four regions and all relevant Union and Upazila Parishad members, staff, and officials.

Training modules and curricula developed to promote co- management and climate resilience (for GOB human resource training centers and universities)

3.2.3 Meet with Existing Curricula Review Committees within GOB Departments and Key Universities

To review the existing curricula of selected universities and government training institutions, a Bangladeshi consultant was recruited and provided support from the capacity building and training team. Three workshops were arranged to review existing curricula of universities and government training institutions, focusing on the content related to climate change adaptation and mitigation, climate-resilient NRM and co-management. One workshop was held in Institute of Forestry and Environmental Science, Chittagong University, and two workshops were held at Bangladesh Forest Department in Dhaka.



Photo 5: CCF, DCCF of FD, CREL Focal Point from DOF and DCOP of CREL Project inaugurating the curriculum review workshop at FD

In total, 68 participants attended the workshops. Participants included: professors, associate professors and departmental heads from 19 major public and private universities; senior officials from the FD, DOF, the Forest Academy of FD, the Fisheries Diploma Institute and Fisheries Training Academy of the DOF; and the Bangladesh Public Administration Training Center. The main objective of the workshops was to find gaps in the existing curricula and examine how courses or modules on climate change, climate-resilient NRM and co-management could be included in curricula. Participants assessed their respective curricula, identified gaps and presented findings through group exercises.

3.2.4 Conduct Workshops with Curricula Committees

Combined with activity 2.3 above (and based on the outcomes of these curricula review workshops), CREL's consultant prepared outlines of seven possible curricula and/or modules. These outlines were shared with experts within the FD, DOF and DOE as well as the CREL team. The major topic for each curriculum is given below:

- Basic Concepts of NRM
- Community Participation and Sustainable Development in NRM
- Governance and NRM
- Community-based NRM and Co-management –The Tools of Natural Resource Governance
- Co-management as a Governance Approach to NRM
- Ecotourism, Carbon Trading, Education and Research Potentials through Co-management
- Best Practices and Lesson Learned on NRM Co-management in Bangladesh

Key findings from this process included:

- Climate change adaptation, mitigation and resilience issues are poorly represented in the existing curricula of academic and training institutes. Participants requested immediate and adequate support to incorporate these issues in respective syllabi.
- Climate change issues must address community-based adaptation, mitigation and resilience as the major thrust of curricula development since significant changes will take place at community level.
- Local level experiences and best practices must be revealed and generated through incorporating study and research into the proposed curricula.
- Joint research needs to be promoted to exchange views, ideas and field experiences in relation to climate change adaptation, mitigation and resilience, as well as collaborative efforts in NRM.
- Participants demanded comprehensive training to develop the capacity of academic teachers on climate change issues. There is a demand for ToTs, whether from CREL or other relevant organizations.
- Teaching materials on climate change issues are very limited. Sharing materials and examples from CREL and other development partners would be helpful.
- Introducing climate change-related topics in tertiary education requires basic lab facilities, sufficient field visits and the involvement of faculty in research. Participants requested that CREL consider these needs in future planning.
- The number of faculty, trainers, researchers and practitioners available in the NRM and environment field, particularly with knowledge of climate change, is very limited and should be a focus of recruitment and staffing.
- Curricula should be need based, flexible and up-to-date in order to adopt any required changes when necessary.
- Market demand should also be considered while developing and updating curricula related to climate change and co-management aspects of NRM.

3.2.5 Conduct Training on New Modules/Curriculum

No activity in this year. In year 3, the CREL team will prioritize (based on interest and potential) and work with short-listed institutes and universities on the development of new and/or improved course modules and curricula, including orientations and trainings for faculty, lecturers and instructors. CREL support development of new/improved modules or curricula in at least five institutes.

Stakeholders using climate information in their decision making

Sub-IR 2.1 Strengthened Organizational Capacity of NRM Institutions

Institutions with improved capacity to address climate change issues

3.2.6 Build Capacity to Plan for Climate Change



Photo 6: Group work of CMC members in CC & NRM training at Khulna Region

To build capacity to plan in response to climate change, CREL has worked with Bangladesh Center for Advanced Studies (BCAS) to develop a training curriculum on climate change adaptation and mitigation and climate resilient NRM, as well as primers for CMO and VCF members on climate-resilient livelihoods training. Using these modules, manuals and primers, attendance at training including climate change adaptation and climate-resilient livelihood topics totaled 28,909 largely from VCF and CMO members, and attendance at training including climate resilient NRM topics totaled 26,936 largely from VCF and CMO members (note in some cases this refers to the same training event with modules on each of these topics).

A six-day ToT was held in each region for CREL staff on the PCVA and local-level planning processes. Field teams then worked with the members of CMCs and VCFs on orienting them in how to assess climate vulnerability and social-ecological systems in landscapes using PCVA tools and methods. In year 2, CREL completed more than 200 PCVAs. This supported the development of local-level planning and co-management plans that address climate risks and vulnerabilities, and include ecosystem adaptation options.

Related training programs and the number of participants for year 2 are given in **Table 6** below.

Table 6: Participants in ToTs and Training Courses related to Climate Change Adaptation

	Cox's Bazar			Chittagong			Sylhet and Modhupur			Khulna			Dhaka			Total Male	Total Female	Grand Total
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T			
CCAM & NRM	973	619	1592	1330	1745	3075	586	387	973	703	977	1680	58	5	63	3650	3733	7383
CR Livelihood	833	1882	2715	682	548	1230	1926	2012	3938	2962	9897	12859	0	0	0	6403	14339	20742
NRM & Biodiversity Conservation	55	21	76	46	10	56	183	17	200	138	15	153	0	0	0	428	63	485
Staff ToT on CC	114	20	134	24	9	33	44	15	59	14	58	72	0	1	1	196	103	299
Net Total	19,75	2,542	4,517	2,082	2,312	4,394	2,739	2,431	5,170	3,817	10,947	14,764	58	6	64	10,671	18,238	28,909

Note: in this table the same person attending two courses is counted twice (whereas for M&E indicators that person is only counted once and staff trained are excluded from the M&E indicator totals).

In addition, to strengthen knowledge of senior level government officials, CREL in collaboration with Bhutan SAARC Forestry Centre, developed and organized a training workshop in Bhutan on Climate-Resilient NRM focused on PA (forest and wetland) conservation. A group of 14

senior government officials from FD, DOE, DOF, MOEF and MOL participated. This program was partly sponsored and facilitated by the Bhutan SAARC Forestry Centre in collaboration with CREL. Major objectives of the study visit and training workshop were to:

- Share experience and learn about the impacts of climate change on biodiversity, forests, wetlands and PAs;
- Learn about collaborative management of forest and wetland ecosystems and effective models of forest management appropriate to REDD+; and.
- Understand the importance of community participation in NRM and the need to diversify livelihoods for reducing pressure on forests and wetlands.

The study tour enabled the participants to share and compare experiences. The major contents of the study visit course covered the following: information and coordination mechanisms for forest and ecosystem management; status and profile of forests in Bhutan and the implications for climate change; forest management strategies and practices; community involvement for conservation of forest ecosystems; PA management, status and challenges; biodiversity conservation policy and strategy, focused on forests in Bhutan; wetland status, management policy and strategy in Bhutan; climate change mitigation and adaptation: policy, strategy and impacts on forests and wetlands in Bhutan; land management in Bhutan, especially forests and wetlands; national forest inventory and carbon measurement for REDD+ interventions in Bhutan; and lessons learned from Bhutan about alternative income generation for forest dependent people. During this study tour, participants visited communities, PAs and Serbethang and Phobjekha national biodiversity centers.

Co-Management Organizations with Improved Performance

3.2.7 Review and Update Modules and/or Manuals, and Conduct TOT to Build Capacity of CMOs

A training curriculum and manual were modified and revised for the training of CPGs on biodiversity conservation and forest protection. This manual was used to conduct training for CPG members in all relevant regions. CREL also improved and modified an integrated training manual on protected area co-management for biodiversity conservation for local level government officials and CMC members. Furthermore, CREL staff updated the training module on entry fee collection and revenue sharing mechanisms for sustainable co-management. These manuals have been modified and revised from USAID's previous IPAC project to cohere with and achieve the objectives of CREL.

Sub-IR. 2.2 Improved knowledge and skills of NRM stakeholders

14,500 people receiving training to build resilience to climate change

Component 2 staff developed modules and curricula for ToTs of CREL staff in all components, with guidance from technical staff. These curricula and ToTs have contributed to targets in other components. For example, the trainings conducted on climate-resilient NRM, climate-resilient livelihoods, PCVAs, grant and financial management, tourism guides, entry fee collection, and gender mainstreaming in NRM. These trainings covered CMO and VCF members, villagers, local and national level government officials (as noted in Section 3.2.1.)



Photo 7: Local government officials at a training session on climate change and NRM in Cox's Bazar region

Several curricula and modules were also developed on climate resilient livelihoods (fish culture, vegetable gardening and livestock) for the ToT of LSPs and CREL staff, and their subsequent training of beneficiaries at the regional level.

3.2.8 Develop Livelihood and Enterprise Training Curricula

In support of Component 4, CREL's contracted service provider, FIVDB, and the capacity-building training and livelihoods teams of CREL developed a financial and entrepreneurship curriculum, two primers, a teacher's guide for financial literacy learners, flip charts, monitoring tools/check-list for the FELC training, and arranged both an eight and four day foundational training on two primers for 20 Literacy Facilitators (Sayahaks). FIVDB also conducted a ToT on financial literacy monitoring and supervision mechanisms and literacy mapping for 30 field level CREL staff.

On a pilot basis, the seven-month long FELC course initially was completed in 18 centers with 336 VCF members. Subsequently, the first primer was revised and improved for use in the second phase. This course mainly covers: basic financial literacy; life skills; nutrition; NRM; climate change and its impact on agriculture, health, biodiversity, wetlands and fisheries; disaster management and risk reduction; entrepreneurship and business development and management; and gender equality and women's rights.



Photo 8: Participants at a FELC class, Kaptai NP, Chittagong

The second round of FELC training started in year 2, and a further 3,268 poor women and men are enrolled in 165 groups in all four regions. To support the learning process, a total of 190 Learning Facilitators (Sayahaks) were trained. This round of the seven-month FELC program will be completed in year 3.

In association with Youth Training Centre (YTC) Sylhet and local government officers, CREL developed skill-training modules on climate resilient fish culture, livestock (poultry and duck rearing) and vegetable cultivation, and arranged ToTs for LSPs in Sylhet region. In total, 100 LSPs attended the training, and they have conducted trainings for about 2,000 farmers. The total number of livelihood beneficiaries trained in different enterprises is reported in Section 4.3

Table 12.

CREL signed an agreement with Tarango, an organization with an expertise in forming SLGs. The major objective of the SLG program is to develop financial capacity to establish and grow livelihood enterprises. Tarango, in collaboration with the capacity building and training team of CREL project, developed a ToT curriculum and modules on SLG operation and management for VCF members. In total, 60 CREL staff from Chittagong, Cox's Bazar and Khulna regions attended and received the training. They later conducted trainings for 374 VCF members interested to forming SLGs.



Photo 9: CREL staff in a ToT session on SLGs, Chittagong region

Component 2 Activities that Support Component 1

Sub- IR 2.1 Strengthened Organizational Capacity of NRM Institutions

Co-management organizations with improved performance

The Grants and Governance staff are responsible for field-based training aimed at building the capacity of CMOs, particularly in terms of the organizational and operational sustainability. These activities contribute to targets under indicators for Component 2.

Based on a comprehensive baseline assessment undertaken in year 1, CREL developed five key criteria of sustainability for CMOs with an associated set of 17 indicators which assess CMO capacity and progress. CREL has discussed these criteria and indicators with each CMO. Based on the CMO assessment report, CREL also facilitated the development of CMO capacity-building action plans. Activities in year 3 will focus on the implementation of these action plans under different IRs.

In addition, governance and grants staff facilitated the preparation of capacity-building small grants proposals, which CMOs submitted for approval. Out of the proposals submitted, six for wetland RMOs/VCGs and eight other small grants have been awarded. A further 16 for forest CMOs are being processed.

3.2.9 Develop and Test Co-management Stakeholders' Self-assessment Methods

CREL developed an assessment method and set of indicators that will be used in the first quarter of year 3. This process of determining CMO sustainability has identified five key criteria: legitimacy, organizational functioning, governance and inclusiveness, adaptive participatory management, and resource mobilization. The executive committee of each CMO, a focus group of general members, and CREL staff will review their documented progress (records etc.) and score their organization's achievements and challenges against each of these indicators using a standardized format. CREL will compare these scores with an interpretation of the baseline assessments developed and conducted by CREL (using the 17 indicators), and will repeat the assessment at the end of year 3 (and each year thereafter).

3.2.10 Finalize CMO Action Plans and Conduct TOT Training on Governance

CREL prepared strategy papers on entry fee collection mechanisms and CMO architecture to improve governance and sustainability of CMOs, and shared them with partner teams and GOB points of contact. CREL also organized workshops in three regions to share action plans for building capacity in organizational and functional areas which were developed using the CMO organizational assessment that was conducted during year 1. Governance training was also initiated for Union Parishad members, and has been completed for relevant Upazila officers.

3.2.11 Build Capacity of CMOs

Overall strategies and customized CMO capacity-building plans have been developed for all CMOs. These are being implemented in a staged process that will continue through year 3. CREL has started to help CMOs determine how to mobilize resources (e.g., grants and technical assistance, and sources of revenue), and develop monitoring plans to implement and track performance improvements. To develop skills in proposal writing and the ability to manage and use funds, CREL advised 31 CMOs on how to prepare grant proposals for CREL. Of the 31 grant proposals submitted, six grants (a seventh grant is pending award) to wetland RMOs and VCGs have been awarded, as have eight small grants to community organizations. The remaining 16 will be awarded to CMCs during the first quarter of year 3. In addition, Chittagong and Khulna regions have started to develop fundraising plans for each CMO to sustain their organization financially.

3.3 Component 3: Strengthening Planning and Implementation of Climate-Resilient NRM and Adaptation

Component 3 will strengthen and expand co-management of biodiverse landscapes by developing the ability of local institutions to plan, protect and restore ecosystems, and respond to climate change through improved management and adaptation. This component has three main

sub-components: (1) the preparation and implementation of climate-resilient PA management plans; (2) establishing sustainable financing; and (3) leveraging United States Government (USG) investment. The main objectives are to incorporate climate change adaptation into PA management plans, strengthen and expand co-management of biodiverse landscapes, and protect and restore ecosystems in PAs, biodiverse wetlands and their landscapes.

Component 3: Expected Results

- Local climate change adaptation plans developed and integrated into PA management plans
- Sustainable financing mechanisms
- Linkages with other USAID programs and other development partners

A brief summary of key accomplishments and outputs for year 2 are identified below. The sections that follow provide more detailed descriptions of various activities and results, based on the targeted activities outlined in CREL's Year 2 Work Plan.

Key accomplishments and outputs include:

- Key institutions have been formed in new sites for establishing co-management and associated plans. VCFs have been formed for Nijhum Dwip NP and Tengragiri WS.
- The 16,352 ha Nijhum Dwip National Park was brought under improved management through co-management,
- Improved biophysical condition in 226 hectares by direct interventions involving 10,600 beneficiaries who planted approximately: 297,000 fruit trees and fuel-wood trees in public lands and homesteads, a further 285,000 mangrove saplings to stabilize intertidal coastal areas adjacent to the Sundarbans, 298,000 seeds of Garjan and Dhakijam (declining forest canopy trees) (planted by school children), and 411,000 dune stabilization plants in eroding coastal areas.
- Participatory climate adaptation plans were developed for 204 villages and consolidated into 26 landscape-level (beat/union level) adaptation and mitigation plans.
- Drafting of five forest PA management plans and three wetlands management plans is underway for inherited co-managed sites, with 50% of the work completed.
- Assisted the FD in completing forest inventories for eight PAs (providing the baseline, and input for management planning and REDD+ readiness).
- Leveraging of resources from private sector, projects/government and communities has continued to progress ahead of target with \$ 0.278 m leveraged in the year.

3.3.1 Help CMOs Develop, Modify and Obtain Approved Co-management Plans for Existing Sites

A management plan is the key tool and operational guideline for all stakeholders involved in resource management and use in biodiverse sites and their landscapes. But many co-managed forest PAs have management plans that have expired or lack them altogether. Also, very few wetlands have management plans. Moreover, in most cases where plans existed, co-management approaches and current climate change issues were not properly incorporated.

CREL originally planned to facilitate the preparation of management plans for 28 CMOs in forests and wetlands. However, during consultations and discussions with the FD, it was decided that CREL should facilitate the development of forest-based PA management plans. As such, the number of inherited forest PAs requiring management plans became 13.

During year 2, CREL-facilitated five forest PA management plans in consultation with the FD and CMOs. These plans will cover both PAs and surrounding landscapes for the next 10 years. They include a breakdown of responsibilities and annual scheduling of activities for the FD and each CMC. Incorporating climate change issues and elaborating co-management in the forest PA management plans are the key challenges. The plans make use of and consolidate the information from the PCVAs. These draft management plans will comprise a set of agreed measures to manage and restore PAs, and sustain the surrounding environments and communities. This will form a basis for securing future funding.

CREL expects to facilitate preparation of five wetland ecosystem plans (some of which are for large areas). In the two major haors there are multiple community organizations managing clusters of waterbodies. In year 2, the main focus was on developing three wetland sanctuary management plans within key parts of Hail Haor and Hakaluki Haor. This has focused on local community planning, but will be integrate expert advice and knowledge generated over the past decade. In all cases the management plans and their associated CMOs are in the process of drafting the plans, as shown in **Table 7** below.



Photo 10: Chief Conservator of Forest (CCF), Forest Department at inception workshop on forest PA management plan development

Table 7: Regional distribution of management plans year two and their associated CMOs

Sl No	Name of PA/Wetland	Coverage and associated CMOs
Forest PAs		
Northeast (Srimongol region)		
01	Khadminagar NP	Entire PA plus landscape - Khadimnagar CMC
Southeast (Chittagong region)		
02	Chunuti WS	Entire PA plus landscape - Chunuti CMC and Jaldi CMC

Sl No	Name of PA/Wetland	Coverage and associated CMOs
03	Dudpukuria-Dhopachari WS	Entire PA plus landscape Dudpukuria CMC and Dhopachari CMC
Southeast (Cox's Bazar region)		
04	Fasiakhali WS	Entire PA plus landscape - Fasiakhali CMC
05	Himchari NP	Entire PA plus landscape - Himchari CMC
Wetlands (all northeast)		
06	Hail Haor	Baikka Beel sanctuary and adjacent area - Boroganginia RMO
07	Hakaluki Haor	Baralaka conservation cluster (sanctuaries and adjacent areas - Halla VCG, Borudal VCG and its partner VCG)
08	Hakaluki Haor	Kalaura conservation cluster (combined Baya Beel and Goznia Beel sanctuaries including related swamp forests), Judhitipur VCG, and Akota VCG.

3.3.2 Begin Drafting Co-management Plans for New Sites

In the first year, CREL prioritized 12 additional sites that would benefit from co-management activities. During year 2, CREL finalized eight new sites in consultation with concerned government agencies and each of these took up initial activities to introduce co-management. Initial activities, but not management planning, have been carried out in: Ratargul swamp forest and wetlands (northeast region); Hazarikhil Wildlife Sanctuary; Bariadhala Wildlife Sanctuary; Nijhum Dwip NP and landscape area; Halda River (all Chittagong region); Sonadia ECA and (St Martin's Island ECA (Cox's Bazar region); and Tengragiri WS (Khulna region). In addition Someswary River will be reviewed and may come under co-management.



Photo 11: Multi-stakeholders consultation

The drafting co-management plans for new sites and milestone activities included the development of a toolkit for secondary data collection, geo-special data collection and analysis, resource mapping and multi-stakeholder consultations at different stages. Moreover, VCFs were formed for Nijum Dwip NP and Tengragiri WS, and the CMC formed for Nijum Dwip NP which is the key initial step to establishing co-management.

3.3.3 Develop Landscape-level Adaptation and Mitigation Plans

Linked with management plan preparation under 3.3.1, CREL developed adaptation and mitigation plans with a key focus on community adaptation, ecosystem regeneration and

biodiversity conservation. CREL staff oriented CMCs and relevant field-based officers of the DOF, FD, and DOE to incorporate climate change resilience in planning.

As many as 204 village-based climate vulnerability assessments (PCVAs) were done. These identify: key climatic hazards and associated risks and vulnerabilities of the landscape communities in relation to NRM and livelihoods, and prioritize coping and adaptation options. The assessments used tools (i.e., transect walk, physical/resource and hazard mapping, climate hazards identification, prioritization and trend analysis, seasonal calendar of key hazards and livelihoods, focus group discussion, climate risks and vulnerability analysis, and group work on coping, adaptation and mitigation).



Photo 12: Prioritization of climate vulnerabilities at Dudpukuria site

The findings of the PCVAs were consolidated at the forest beat/union level in 26 multi-stakeholder consultations involving representatives from government agencies (the FD, DOF, Department of Livestock Services, Department of Cooperatives and Department of Public Health Engineering); local government (Union Parishad chairman and members); and local communities (VCFs, CMCs and other community members). These stakeholders validated the village PCVAs and finalized the list of threats/challenges and possible adaptation options to maintain ecosystem functionality in the face of a variable and changing climate.

CREL supported the development of 26 adaptation and mitigation plans at forest beat/union level, incorporating climate change issues and concerns. These are key inputs to the respective forest PA and wetland management plans.

3.3.4 Improve Biophysical Condition through Implementation of Co-management Plans

Improvement of biophysical condition to restore ecosystems is a key activity of CREL. To improve wetland biophysical conditions, CREL facilitated the planning of five wetland CMOs. It had been intended to support wetland CMOs through grants to implement their plans and environmental clearances were obtained. However, ultimately, these highly seasonal interventions had to be postponed. Re-excavation and water retaining bunds can only be done in the driest 2-3 months, and will now be implemented directly by Winrock International in early 2015 to comply with USAID rules.



Photo 13: Tree seedling distribution among school children to encourage homestead agroforestry at Dhopachari

The main biophysical activities associated with forest PAs have been tree planting in adjacent landscapes. CREL supported tree planting on roadsides/strips, at homesteads and institutions, and with mangroves in coastal sites; as well as “assisted natural regeneration” (ANR) – planting forest tree seeds for example within PAs. In addition, CREL supported 15 people (from poor households) in establishing nursery businesses, which also provided saplings to improve biophysical conditions and afforestation within PAs. CREL also worked with CPGs and VCGs for protection of regenerating forests in PAs and wetlands.

Tree planting is more complex than it sounds. As discussed in greater detail below, substantial effort went into identifying with communities different plantation sites, finalizing lists of acceptable native species (adjusted to future climate), developing environmental compliance reports, mobilizing community groups, and preparing and signing benefit-sharing agreements.

Plantation site and species selections. Tree plantation sites were selected in consultation with CMC and VCF members and other stakeholders. The main tree plantation sites were roadsides, homesteads, institutions and other fallow/unused land. Benefit-sharing agreements were negotiated and signed between new tree-owning groups, landowning agencies, CMCs and Union Parishads. Selecting locally-adapted indigenous species that are socially and economically advantageous was a challenge. CREL held a series of consultations with local stakeholders, field staff and relevant experts. CREL also reviewed FD recommended regional species to finalize its lists of climate-resilient tree species for different regions and working areas.

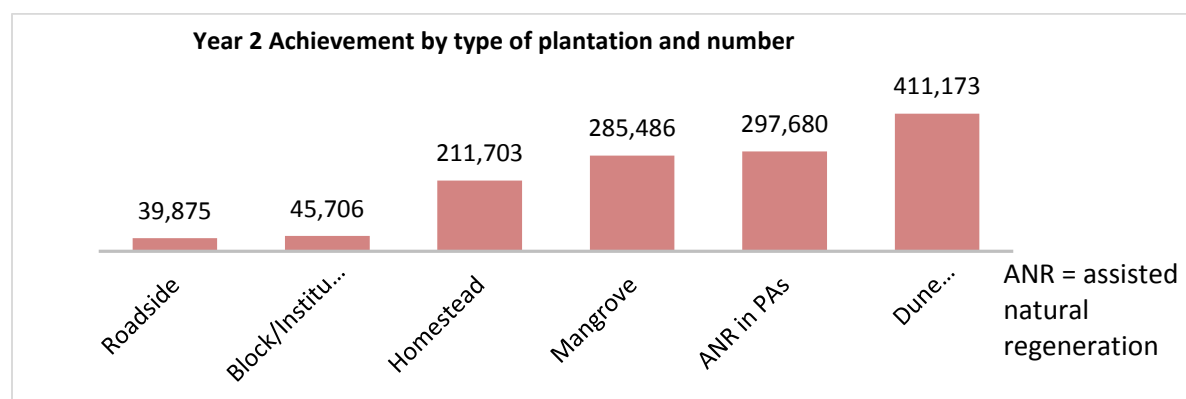
Environmental compliance of tree plantations. To comply with USAID standards on environmental interventions, CREL prepared 40 sets of environmental compliance reports for the tree plantations. This included information on GPS data, maps, and pictures, as well as an environmental assessment checklist and environment mitigation and monitoring plans.

In total, 204 hectares were brought under improved biophysical condition by CREL in year 2. More than 1.29 million tree and shrub saplings were planted, plus almost 300,000 seeds of declining forest trees (mostly garjan). This achievement is shown in **Figure 1**, disaggregated by the type or location of plantation and the numbers of saplings planted.



Photo 14: CREL road side plantation

Figure 1: Tree Saplings Planted, Disaggregated by Type and Location



Cost-sharing for tree planting. In addition to CREL project support, the 10,624 beneficiaries involved in tree planting contributed in cash or kind a total of BDT7,227,914 (about US\$ 94,000) as their share of costs for implementing tree plantation activities. The number of people involved in tree planting is listed in **Table 8** below, disaggregated by regions and sex.

Table 8: Number of people directly involved in and/or benefit from tree planting in Year 2

Region/NGO	Male	Female	Total
North-east	2510	2080	4590
Modhupur	139	606	745
Southwest (CNRS)	2070	589	2659
Southwest (CODEC)	752	43	795
Cox's Bazar	627	1208	1835
Total	6098	4526	10624

The biophysical benefits and objectives for each type of plantation differ based on the location. Information about biophysical achievements for each type or location of the plantation is explained in greater detailed below.

Roadside tree plantation. Roadside plantations provide shade and corridors of trees, help to stabilize slopes of road embankments and increase carbon storage. They also provide fuelwood and a share of the income from future rotational felling. During year 2, 15.73 hectares along roads were planted with 39,875 saplings. The major tree species planted were: Sil Koroi (*Albizia spp*), Chickrashi (*Chukrasia tabularis*), Kadam (*Anthocephalus chinensis*), Mehogani (*Switenia mehogani*), Jam (*Syzygium spp*), Kanthal (*Artocarpus heterophyllus*), Neem (*Azadirachta indica*), Amloki (*Embllica officinalis*), Horitoki (*Terminalia chebula*), Bohera (*Terminalia belerica*), Arjun (*Terminalia arjuna*), Shonalu (*Cassia fistula*), Jarul (*Lagerstromia speciosa*), Chikrashi (*Chukrasia tabularis*), and Jackfruit (*Artocarpus hetophyllus*).

Homestead agroforestry. CREL promoted homestead agroforestry for increased climate-resilience and carbon storage, reduced soil erosion, and improved nutrient supply. This efficient use of available homestead land has also increased household incomes and improved nutrition with the production fruit, timber and fuelwood. Homestead agroforestry covered 90.23 hectares with 211,703 saplings. The main species were: Mango (*Mangifera indica*), Neem (*Azadirachta indica*), Jam (*Syzygium spp*), Jackfruit (*Artocarpus heterophyllus*), Guava (*Psidium guava*), Coconut (*Cocos nucifera*), Arjun (*Terminalia arjuna*), Jalpai (*Eleocarpus longifolia*), Mehogani (*Switenia mehogoni*), Lichi (*Litchi chinensis*), Chalta (*Dillenia indica*), Kamranga (*Averrhoa carambola*), Amropali (*Mangifera indica*), and Jambura (*Citrus maxima*).

Institutional plantations. CREL connected local schools, mosques and other institutions with CMOs, to support planting trees on their land to increase carbon storage as well as provide timber and fuelwood. A total of 20.29 hectares were planted with 45,706 saplings. Key species were: Sil Koroï (*Albizia spp*), Chickrashī (*Chukrasia tabularis*), Kadam (*Anthocephalus chinensis*), Jam (*Syzygium spp*), Kanthal (*Artocarpus heterophyllus*), Mehogoni (*Switenia mehogoni*), Amloki (*Emblīca officinalis*), Horitaki (*Terminalia chebula*), Bohera (*Terminalia belerica*), Jarul (*Lagerstroemia speciosa*), Arjun (*Terminalia arjuna*), Lotkon (*Bixa orella*), Guava (*Psidium guava*), Neem (*Azadirachta indica*), Chambol (*Albizia richardiana*), Chalta (*Dillenia indica*), and Jalpai (*Eleocarpus longifolia*).



Photo 15: Example of an institutional plantation

Mangrove plantation and protection. Mangroves play a significant role in reducing erosion and storm damage for coastal communities, especially during cyclones and storm surges. They are also effective carbon stores, and sources of timber and fuelwood. CREL took the initiative in mangrove planting 235,486 seedlings on 50.60 hectares. The main species were: Kakra (*Bruguiera gymnorhiza*), Bine (*Avicenia officinalis*), Sundori (*Heritiera fomes*), Keora (*Sonneratia apetala*), and Golpata (*Nipa fruticans*).

Garjan seed sowing within PAs. Natural regeneration is important for biophysical improvement, and can sometimes benefit from additional sowing of seeds. Fashiakhali Wildlife Sanctuary and Medakachapia National Park contain diversified gene reserves of ecologically and economically valuable native tree species. To help increase natural regeneration and improve the biophysical condition, CREL supported efforts to sow Garjan seeds. Covering a total of 21.92 hectares, 297,680 seeds of Garjan (*Dipterocarpus turbinatus*) and Dhakijam (*Syzygium spp.*) were sown. This will increase the amount of available timber and fuelwood, as well as increase carbon storage and control soil erosion.

Dune stabilization. In Sonadia ECA the erosion of sand dunes is an issue. VCGs were supported in planting bushy vegetation to stabilize soil on 5.56 hectares, with 411,173 seedlings of Nishinda (*Vitex negundo*) and Dholkolmi (*Ipomoea carnea*) planted.

Nursery. CREL helped to establish nurseries to meet the demand for quality tree saplings at plantation sites, and to generate income for poor CPG members. In total, 15 poor people were assisted in establishing nursery enterprises. In these nurseries a total of 201,954 seedlings were raised. The seedlings were mainly Chickrashi (*Chukrasia tabularis*), Arjun (*Terminalia arjuna*), Neem (*Azadirachta indica*), Bohera (*Terminalia belerica*), Horitoki (*Terminalia belerica*), Amloki (*Embllica officinalis*), Jolpai (*Eleocarpus longifolia*), Amra (*Spondias pinnata*), Mahagoni (*Switenia mehagoni*), Gorjan (*Dipterocarpus spp*), and Papaya (*Carica papaya*).



Photo 16: Tree nursery in the Chittagong region established with CREL support.

3.3.5 Secure Revenue and Entry-fee Sharing

CREL has assisted CMCs in preparing plans for tourism management and development, including entry fees. Following discussions with senior FD officials, CREL field teams supported the introduction of visitor entry-fee collections in Kadimnagar NP, Kaptai NP, Dudpukuria-Dhopachari WS and the reactivation in Chunati WS. Similar arrangements were pursued for Himchari NP, but this will require the replacement of the existing privately-held lease agreement for entry fee collection with a CMC operated system or a FD agreement to share its revenue from the leaseholder with the CMC. Shilkhali CMC (Teknaf WS, Cox's Bazar region) also drafted a plan for entry fee collection from Shilkhali Garjan Forest.

During project year 2 a total of BDT 3,455,709 (just under US\$ 45,000) was collected from entry fees in six sites see **Table 9** below.

Table 9: Entry Fees (from visitors) Collected by CMOs October 2013-September 2014

Site	Entry fees	
	Tk	US\$
Lawachara NP	2,657,130	34,508
Satchari NP	688,775	8,945
Baikka Beel wetland sanctuary	80,795	1,049
Teknaf WS	19,649	255
Rema-Kalenga WS	8,420	109
Chunati WS	940	12

3.3.6 Identify Funding Sources where GOB Revenue Sharing is not Mandated or Possible

In year 2, CREL pursued several initiatives with the private sector to identify funding sources for specific PAs and conservation sites where revenue-sharing or entry fee collection is not mandated or possible.

In Chittagong region, the MOU signed by Dudpukuria CMC and IDLC, a private financial leasing company, will provide support to 355 families in 10 villages for homestead tree planning. A total of 5,680 saplings were distributed, with each family receiving 16 saplings (six Mango, four Litchi, two Malta, two Amalaki and two Guava). This funding from IDLC is part of their commitment to Dudpukuria CMO and CREL to collaborate in scaling-up natural resources conservation and sustainable livelihoods for marginalized people. In addition, based on information provided by CREL, the FD agreed to lease a water body to Dudupukuria CMC for fish cultivation to improve livelihoods of poor forest-dependent people.



Photo 17: Sapling Distribution Inauguration Program, DDWS, Chittagong, August 9, 2014

In the southwest region, CREL facilitated a joint initiative with JOAR, a local NGO supported by MasterCard fund. This initiative will improve the supply side (input marketing) and awareness-raising in order to accelerate nature-based tourism in the Munshiganj area which borders the Sundarbans.

In Cox's bazar region, Teknaf, Whykong and Shilkhali CMCs and the FD (all in Teknaf WS) jointly decided to give priority to 300 forest-dependent households (from among the fuelwood collectors identified by CREL), CPG members and other VCF members for receiving benefits and support from the World Bank-supported CRPARP.

In the northeast, CREL provided recommendations and/or acted as a liaison for VCFs in leveraging benefits and resources from other projects. Examples include: the Community Based Adaptation in Ecologically Critical Areas (CBAECA) project of the DOE trained 147 VCG members (86 men and 61 women) from Hakaluki Haor, and provided in-kind support to 84 VCG members (47 men and 37 women) equivalent to BDT 12,000 (US\$ 155) per person for livelihood enterprise development; an ILO project distributed 1,000 improved cook stoves to members of 28



Photo 18: CCF field visit during forest inventory

VCGs, which will reduce household fuelwood consumption and reduce carbon emissions; the Cooperative Department of Kamalganj Upazila trained 15 VCF members (four men and 11 women) in fund management; and Chevron, a private company, selected 60 households to benefit from its financial support for planting trees.

3.3.7 Assist the GOB to become REDD+ Ready; CREL Will Support GOB Priorities, Particularly as Related to REDD+

Forest inventories were completed for eight PAs. Namely: Lawachara NP, Satchari NP, Khadimnagar NP, Rema-Kalenga WS, Himchari NP, Kaptai NP, Chunati WS and Modhupur NP. These inventories will contribute to the development of local management plans, measurement of biophysical change, and REDD+ readiness. CREL also drafted a National REDD+ Atlas, and developed standard operating procedures for forest inventories along with a land cover classification. All of these actions will support and inform national readiness for REDD+.

3.4 Component 4: Improved and Diversified Livelihoods that are Environmentally Sustainable and Resilient to Climate Change

The objective of Component 4 is to increase incomes for people living in or near PAs and ECAs, by promoting diversified livelihoods that are environmentally sustainable and resilient to climate variability and change. These villages are very poor and highly dependent on natural resources. They also tend to be located in areas that are the most vulnerable to natural disasters and the effects

of climate change. CREL works with these resource-dependent households and communities to identify alternative livelihoods and incentives for protecting resources, thereby reducing resource dependence and stopping extractive practices. Examples include: ecotourism, payment for environmental services, and alternative income generation activities or enterprises.

Component 4: Expected Results

- Promotion of environment-friendly, climate-resilient, sustained livelihood options
- Increased income from livelihood activities
- Improved access to household/community level, climate-resilient basic infrastructure
- Improved access to climate information and financing mechanisms

In year 2, CREL worked to improve the income and well-being of 50,000 resource-dependent rural households, largely by integrating them into rapidly growing subsectors or value chains that secured alternative income and employment opportunities. In coordination with CMOs and other stakeholders, CREL identified 40,836 potential beneficiaries (largely from VCFs) and formed value chain groups. CREL facilitated various hands-on technical skills training to improve production and meet market demand. CREL also identified LSPs and strengthened their capacity and networks in respective subsectors. In addition, CREL facilitated links between farmer/producer groups and markets or buyers to improve input supplies, product marketing and



Photo 19: Production skills links to markets and seasonal credit support to women in the high value vegetable subsector are increasing household incomes

commercial production in order to increase income. To increase impacts on livelihoods and leverage, important links also included developing partnerships with different projects, micro finance programs, eco-tourism service providers and private sector actors.

CREL organized FELC training, especially for women. These seven-month course aim to help participants become financially literate entrepreneurs, while also exposing them to information about the importance of conservation and climate resiliency (among other topics). Progress has been made as a result of FELC training, but the full potential for increased income from new enterprises and technologies will not be known until beneficiaries' activities or enterprises are more established and three

seasonal production cycles have been completed. As a result, more reliable evidence will only be available in the last year of the project. **Figure 2** shows the step-by-step process that was undertaken in year 2.



Figure 2: Step-by-step Process

Achievements are summarized in **Table 10** below.

Table 10: Summary of IR 4 Achievements in Year 2

Activity	Year 2 Total	Units
Beneficiary selection through participatory approach	40,836	Households
Beneficiary data entry in CreLink	32,107	Households
Livelihood group formation on different trades	1,044	Groups
Technology demonstration plot established	394	Plot
Skill development training of the beneficiaries	18,931	Persons
Households practicing livelihood trades	16,454	Households
Number of households with increase economic benefit*	2,140	Households
Additional market revenue generated by the participants*	161,700	BDT
Private sector engagement through buy-back mechanism for resource users beneficiaries	611	Households
Local Service Provider (LSP) development	400	Persons
Financial and Entrepreneurship Literacy Centre	183	Center
Financial and Entrepreneurship Literacy participants	3,604	Person
Vocational training participants	38	Person

Activity	Year 2 Total	Units
MOU Signed for leverage project interventions	9	Organization
Entry Fee Collected from PAs	3,454,709	BDT

*Only beneficiaries who received training in improved horticulture enterprises in the first half of calendar year 2014 had scope to achieve income gains within year 2, and a sample survey was made of these. Other beneficiaries were part-way through seasonally determined production cycles (such as aquaculture, crops, etc.) so income changes could not be assessed within year 2. See Section M2 for further details.

A brief summary of key accomplishments and outputs for year 2 are identified below. The sections that follow provide more detailed descriptions of various activities and results, based on the targeted activities outlined in CREL's Year 2 Work Plan.

Key Accomplishments and Outputs include:

- A total of 40,836 beneficiaries were selected in collaboration with Forest Department, CMOs and other stakeholders. Data on 32,107 beneficiaries was uploaded in CrelLink.
- 18,931 beneficiaries were trained on different value chains in four region of CREL project.
- 394 Technology demonstration plots were established to disseminate improved technologies among the targeted farmers.
- Private sector engagement achieved through a buy-back mechanism for producing toys and caps between private sector businesses and 611 women beneficiaries. This was established in collaboration with Pebble Child Company and Cap Sewing Traders, and there are understandings to expand this for 700 more women beneficiaries.
- To promote eco-tourism and develop eco-tourism enterprises, MOU signed with Community Based Tourism (CBT) Bangladesh to develop 500 youth entrepreneurs in the tourism sector.
- 35,000 visitors in three days visited the CREL pavilion at the "International Tourism Fair 2014," gaining valuable insight on PAs and the scope for nature tourism in Bangladesh.
- BDT 400,000 (US\$ 5,066) provided by "IDLC Finance Limited" to Dudhpukuria and Dhopachori CMCs so that 355 households can produce fruits by planting 5,680 saplings.
- Under the CDS of USAID, CREL organized a visit with USAID's FtF projects in order to identify scope for joint initiatives and maximize impacts in the southwest region.

IR 4: Improved Livelihoods that are environmentally Sustainable and Resilient to Climate Change

Number of people with increased economic benefits derived from sustainable NRM in conservation as a result of USG assistance

Sub-IR 4.1 Increased investment in eco-friendly enterprises

Additional market revenue generated from protected areas and landscapes as a result of USG assistance

Sub-IR 4.2 Number of farmers and others who adopt environmentally-sustainable climate-resilient livelihoods

Number of farmers who have applied new technologies and management practices

3.4.1 Finalize Beneficiary Selection

CREL targets poor, illiterate and resource-dependent people as its main beneficiaries. In year 2, 40,836 beneficiaries were selected. The project has a target of 50,000 beneficiaries, by the end of the project. Remaining beneficiaries will be selected in collaboration with the FD and CMOs in year 3.

Selecting beneficiaries was a mammoth task, and included preparing a basic profile of each beneficiary which was uploaded in CreLink (the project's real time online database). Thus far data on 32,107 beneficiaries have been uploaded. In the process of beneficiary selection, CMCs, RMOs and VCF /RUG members as well as the FD were heavily involved. In addition, three workshops were arranged in Sylhet, Chittagong and Cox's Bazar in collaboration with the FD to identify those beneficiaries most dependent on forest resources.

3.4.2 Define Training Needs to Strengthen Value Chains.

Based on the value chain assessment findings and beneficiary profiles, 1,044 value chain groups were formed in year 2. These groups are specific to 33 different and selected value chains (see **Table 11**). The main value chains are: aquaculture, poultry (duck or chicken), horticulture (mostly vegetables, but also strawberry, capsicum and other fruits), dress making and cap sewing. About 400 LSPs were trained in both technical and business-development skills to work with beneficiary farmers and producers. In addition, 86 of these LSPs in the Khulna region participated in a ToT in collaboration with USAID's FtF Aquaculture Income and Nutrition Project implemented by WorldFish.

Table 11: Value Chains or Trades Supported by CREL

2	Fish Culture	19	Rajanigandha(Tube Rose)
3	Vegetable Cultivation	20	Blanket (Kombol)
4	Poultry Rearing	21	Gamcha
5	Strawberry	22	Brinjal (Begun)
6	Capsicum	23	Green Chili (Kacha Morich)
7	Handicrafts	24	Bitter Gourd (Karalla)
8	Papaya	25	Pumpkin
9	Banana	26	Potato
10	Cow Rearing	27	Tailoring
11	Country Bean (Barbati)	28	Net Making
12	Bean	29	Lemon
13	Tomato	30	Other
14	Teasle Gourd (Kakrol)	31	Cap Making
15	Cucumber	32	Petty Trade
16	Bottle Gourd (Lau)	33	Ecotourism
17	Maize (Bhutta)		

3.4.3 Provide Income-generation Training to Selected Beneficiaries.

In year 2, a total of 18,931 beneficiaries received training in different value chains. These included aquaculture (both carp poly-culture and mono-sex Tilapia), duck rearing, horticulture (mixed vegetables or specialist crops, such as strawberry and capsicum) and handicrafts (such as cap sewing) (**Table 12**).

As many as 394 demonstration plots were established in to demonstrate new technologies to the farmers as models for replication. More than 40,000 crop calendar formats were printed and distributed to all beneficiaries to help them plan their crop cycle and ensure better market prices for their produce. Similarly, more than 40,000 income-expenditure books were distributed to farmers so they can keep better records of their earnings and costs, and improve their financial management (as well as provide a basis for checking on their progress for CREL staff).

CREL also started pilot SLGs for beneficiaries. This will help them build their own small reserves through revolving funds, strengthening resilience through this autonomy. A total of 72 SLGs have been started in CREL's four regions.

Table 12: Numbers of Beneficiaries Trained in Livelihood Enterprises by End of Year 2

Region	Sylhet	Chittagong	Cox's Bazar	Khulna	Total
Horticulture	1,392	914	1,848	3,405	7,559
Aquaculture	657	6	2	8,411	9,076
Poultry	1,388	57	0	0	1,445
Handicrafts	21	15	698	0	734
Fruit	0	87	0	0	87
Other	0	2	0	28	30
Total	3,458	1,081	2,548	11,844	18,931

In addition, CREL started working on developing the capacity of the farmers to practice improved climate-resilient techniques for horticulture (as appropriate to specific locations). These include:

- 1) Bed preparation (raised bed with better drainage)
- 2) Integrated Pest Management and organic methods
- 3) Early cultivation and short duration varieties
- 4) High yielding varieties (and Hybrid varieties in the case of selected vegetables)
- 5) Stress tolerant varieties (drought, salinity or flood tolerant)
- 6) Multi-cropping techniques including successional sowing
- 7) Protecting crops (plastic sheets and/or nets)

A similar set of good practices and indicators has been developed for aquaculture, and will be reported in year 3 following pond harvests.

CREL documents the range of practices that farmers adopt in sample surveys. The practices highlighted in green on **Table 13** (below) improve climate-resilience. CREL examines marketing information, record-keeping and local conditions before making recommendations.

Table 13: Selected Improved Technology Practices (Green Shaded) in Horticulture/Agriculture

Issue	Practices				
Rice varieties	Salt tolerant;	Drought tolerant;	Water logging tolerant;	Traditional;	
Type of seed grown;	Local variety;	High yielding variety;	Hybrid variety;	Pest resistant variety	
Soil Management;	Used compost/cow dung/poultry litter;	Used green manure;	Crop rotation/grew crop good for soil;	Mixed crops residue into soil;	Used chemical fertilizer
Cropping layout;	One crop in a plot;	Multiple crops in a plot in separate blocks;	Mixed crops (no separate blocks or line);	Intercrops (multiple crops in separate line);	Relay crop;
Other practices;	Raised bed;	Plastic sheet house;	Net house;		
Pest management;	Didn't do anything;	Used pest resilient seed	Used sex pheromone;	Used organic pesticide;	Used chemical pesticide;
Profit Maximizing Strategy;	Early Cultivation;	Plant same crop on different dates for series of harvests;	Store produce until price is better;	Grow crops with high sale price	

3.4.4 Identify and Strengthen Markets for Resource Users

In year 2, CREL linked beneficiaries to trainings and skills development that have created new income-generating opportunities and access to markets.

CREL facilitated an agreement to train women from resource-dependent households in handicraft production. A private sector company, which carries the Pebble Child brand, produces high-quality soft toys – 100% of which are exported. Pebble Child is now working with CREL beneficiaries: 200 disadvantaged resource-using women from villages near Kaptai NP, Chittagong, and in Munshiganj (Sundarbans), Sathkira District. The women were trained by and receive all supplies from the Pebble.

This outsourcing provides them a new income-generating activity they can do from home on a regular basis. In September 2014, Pebble Child committed to training 800-more resource-using women as their producers.

FtF and CREL Partnership

- CREL organized a join visit with other USAID projects under the umbrella of Feed the Future projects during 15-18 September, 2014
- Participating organizations were CARE, DAM, IFDC, CIP and WorldFish.
- All organizations decided to add collaboration effort in their work plans.
- CREL and CIP agreed to introduce summer tomato and sweet potato in CREL working areas.
- CREL and Agriculture Extension Project agreed to introduce a mobile/cell phone application through LSPs of CREL

CREL also connected 455 women to contractors who sell prayer caps. These CREL beneficiaries received training and are now producing high-quality prayer caps, for both the domestic and international markets, in Cox's Bazar region.



Photo 20: *Hardcore resource users are working with private sector and making international standard dolls/toys for export*

CREL developed a Nature Tourism Strategy with the help of an international consultant. Based on the recommendations made, CREL conducted four batches of Eco-guide training for the local youths in Chittagong and Cox's Bazar, and one batch of entry-fee management training for CMO members. Tourist facilities are being developed in Kaptai NP and Khadimnagar NP. CREL also supported the USFS-DOI team in planning its support for eco-tourism in Cox's Bazar and the northeast regions, to ensure coordination with CMC and CREL initiatives.



Photo 21: Signed MOU with CBT Bangladesh to develop five hundred community entrepreneurs/self-employment

Furthermore, to promote eco-tourism in sites supported by the project, CREL participated in the Asian Tourism Fair. This was attended by 35,000 visitors. The Bangladesh Tourism Minister handed over the MOU for promoting tourism between CREL and Community Based Tourism Bangladesh during the inauguration.

3.4.5 Link Targeted Beneficiaries to Credit Programs and other Donor-funded Projects

CREL has successfully created partnerships with other projects and different stakeholders to leverage resources for the targeted beneficiaries and institutions. Examples of this include:

- IDLC Finance Limited signed MOU with Dudhpukuria-Dhopachori CMC, and provided BDT 400,000 (about US\$ 5,200) for 355 households to plant fruit tree saplings.
- CREL facilitated access to finance. Two micro finance programs signed agreements to provide seasonal credit to participant farmers.
- MOU signed with JOAR, a nature tourism business, to contribute to the CMC fund for conservation out of the revenue earned each month in the Munshiganj area. JOAR plans to also explore community-based tourism opportunities with three new eco-cottages and two boats.
- Community Based Tourism Bangladesh, a private company, agreed to develop the skills of 500 people so that they can gain employment in nature based tourism in the northeast region.
- USAID-support Aquaculture Income and Nutrition Project trained 120 LSPs from the CREL project.
- Eighty-four CREL beneficiaries received BDT 1 million (almost US\$ 13,000) of in-kind support through CBAECA project in Hakaluki Haor.
- VCGs received 1,000 Improved Cook Stoves in the northeast region, leveraged through ILO support.
- CREL facilitated Arannayk Foundation support for livelihood activities for 3000 households in the Chittagong region.



Photo 22: IDLC finance distributed 5600 fruit tree species among 355 resource dependent families at Dudhpukurea

3.4.6 Provide Financial Entrepreneurship and Literacy Center Training

A total of 183 FELCs were started in CREL's four regions to 3,604 non-literate resource-dependent people – mostly women. Livelihood beneficiaries attend the FELC 2 hours each day for 6 days a week in a 7-month course. Through this training illiterate livelihood beneficiaries learn basic literacy and numeracy skills (e.g., calculations to keep basic accounts), as well as life skills and entrepreneurship. The FELC curriculum also teaches participants about social and environmental issues, the benefits of reducing dependency on natural resources and ideas for diversifying livelihoods and adapting to climate change. The importance of gender equality and equal distribution of food, education and resources for male and female children are also discussed. In some groups, women have pledged to end early (child) marriage and not give or receive dowry payments.



Photo 23: Women are learning at FELC

3.5 Cross Cutting Activities

3.5.1 Youth

Youth engagement is also a core aspect of CRELs approach. Training has been provided to more than 10,000 youth, focusing on in alternative climate-resilient livelihoods. Trainings have targeted youth and women, particularly resource-dependent youth living in and around wetlands and forest PAs.

In addition, CREL organized a visit for university students to PAs in northeastern Bangladesh. The tour provided an opportunity for young people to gain practical understanding of how local government and communities use co-management methods to protect natural resources. They also learned about responsible tourism and its relation to biodiversity conservation.

Through the CREL outreach program, 50 youth completed radio journalism training with a conservation focus and 15 students from BRAC University participated in a three-day forest camp where these students studied natural resource management and biodiversity conservation as well as wildlife photography.

Furthermore, CREL oriented more than 5,000 students from 28 schools in all of its four regions through its school-based awareness programs. During the World Wetland Day more than 4,000 students took part in conservation quizzes and rallies in and around Bangladesh's largest wetlands.

3.5.2 Gender

Greater equality and female empowerment are essential for the health and sustainability of ecosystems and communities, creating a basis for greater resilience, more effective engagement,

and better results. CREL's commitment to gender equality, female empowerment, and eliminating all forms of discrimination and gender-based violence (GBV) is expressed in policies, approaches and outputs.

Key accomplishments and outputs include:

- Application of a gender approach in CMO membership and committee "reforms" is increasing the inclusion of women in different tiers of co-management, with 50% female general members and 40% female executive or office-holder positions in many PFs.
- Increasing numbers of female beneficiaries (nearly 63% of livelihood beneficiaries are women, more than 50% livelihood demonstration plots are being managed by women, and 90% of participants in Literacy Centers at the VCF level are women).
- CREL Gender Strategy finalized and submitted to USAID.
- Orientation workshops have been conducted, in Bangla, on the Gender Strategy for CREL partner's staff who will implement the strategy.
- Gender Scorecard Survey questionnaire finalized and field-tested. The training to conduct the survey and collect baseline data was also completed. The baseline survey will be done in Q1 of year 3 with FELCs that were established in September 2014.
- Participatory Gender Needs Assessment (PGNA) finalized, capacity building workshops conducted at regional and site levels, assessments will determine priority areas and lead to customized gender action plans.
- Production and distribution of gender guidelines in a poster to all CREL offices. Covering gender equality, female empowerment, and workforce diversity, these guidelines will facilitate fair and equitable engagement of women and men within the workplace and among CREL beneficiaries.
- Promoted the adoption of 500 improved cook stoves, which will help to reduce carbon emissions and provide for a healthier household environment.



Ms. Rameza Begum is participating in CREL's Financial and Entrepreneurial Literacy program. She explains her experience and the change it has created in her life: "In the beginning, I felt a little shy walking to Centre with my books. But now I feel proud to be a learner of this Centre. One day, I was looking at my grandson's books and he told me that he did not understand them. I showed him my books, and told him that I am learning a lot from my Learning Centre. From that day, my grandson and I discuss our lessons. When my grandson calls me his study friend, my heart fills with joy. Now we play with Bangla letters, make words using letters, and count Bangla numbers. I feel my world has expanded, as have my possibilities for advancement. The Literacy Center is changing my life for the better..."

3.5.2.1 Conduct Participatory Gender Need Assessment at PAs level (CMCs, CMOs/RMOs, and VCFs/RUGS).

Participatory Gender Need Assessment (PGNA) tools were finalized and incorporated into the Gender Mainstreaming in NRM and Climate Change Adaptation training. Staff members were taught how to use PGNA tools to identify gender gaps/inequalities in CMOs, and CMOs also started to receive gender training to identify inequality in their institutions, communities and households. Based on this, they are preparing gender action plans to ensure gender equality and women's empowerment. The PGNA has been conducted in 14 CMOs and 14 Gender Action Plans have been prepared. This will help to ensure gender equality, and empower women in CMOs.

Gender issues have been added to the agenda/discussion points in all tiers of co-management institutions with the aim of ensuring mainstreaming of women and men's issues and to achieve greater gender equality and women's empowerment in co-management. CREL supported VCFs have been developing gender and diversity-sensitive adaptation and mitigation plans including: resource planning, management planning, disaster management planning and annual operational planning to reduce the risks and vulnerability of women and men due to increasing impacts of climate change, and these will be rolled up into site level management plans under Component 3 in year 3. Women are engaged as laborers for pond excavation, guarding planted trees, and homestead planting activities, which is ensuring more equal access to project benefits, although ownership of planted trees is still limited to men—a situation that will be addressed.

Winrock Gender Consultant, Dr. Charla Britt, worked with the Gender Specialist and CREL field teams and regional staff to assess gender gaps and CREL program activities through a gender lens. She also updated the CREL Gender Strategy, including a series of actionable recommendations that were further developed in the Year 3 Work Plan.

3.5.2.2 Organize Basic Literacy and Entrepreneurship Skills Training and Organizational Leadership Training for Women and Men

CREL's Financial and Entrepreneurial Literacy Centers (FELCs) work with men and women to help ensure economic gains and benefits to women and youth. CREL staff worked with families to stress that women working ensures healthy families, healthy communities, and healthy ecosystems. Nearly all FELC participants are women (95%), as are the facilitators/teachers (95%) (**Table 14**).

Gender-related issues are being incorporated into the FELC curriculum. The curricula include information on the importance of gender equality, equal opportunity for education and food distribution, family planning, and the negative consequences of early marriages and dowries. Other important issues included for discussion relate to concerns of gender based and domestic violence, and resources to address these.

Table 14: Male and Female Participation in FELCs by Region

Name of Region	No. of FELCs	Present status of men & women involvement as FELCs Participants			% of women participants
		Total	Male	Female	
Chittagong	16 (5 Male)	268	80	188	70
Khulna	84	1680	0	1680	100
Sylhet	42 (5 Male)	840	100	740	88
Cox's Bazar	41	816	5	811	99
Total	183 (10 Male)	3604	185	3419	95

In addition, some of CREL's facilitated livelihood development activities are targeted exclusively at women. For example, Pebble Child trained and contracted 156 women to make high-end soft toys for export, based on a guaranteed buy-back insurance system; 20 ethnic minority women received training on making handicrafts for local and urban markets in Bangladesh; and 455 women received training on crocheting prayer caps with links to both domestic and export markets.

Pilot-testing for organizational leadership training started, focusing on new female CMO members. These trainings will be conducted primarily in year 3. The objective is to help build the confidence of women who are newly involved as members and/or in leadership/office holder positions. An increasing number of women are being included in different tiers of co-management as CMO's are reformed with targets for 50% female general members and 40% female executive or office-holder positions in many CMOs.

Table 15: Percentage of CMO Membership Composed of Women in Forest Co-management Institutions

Region	VCFs	PFs	CMCouncil	CMCommittee
Cox's Bazar	79	50	23	20
Chittagong	54	45	17	13
Khulna	21	49	24	22
Sylhet	50	34	19	15
Average:	51	44	21	17

3.5.2.3 Organize Gender and Mainstreaming Training in NRM and Climate Change Adaptation

The training manual on gender mainstreaming in NRM and climate change adaptation was finalized in year 2. Following this, a ToT on gender mainstreaming in NRM and climate change adaptation was held in four project regions, and attended by 80 staff members (among them 21 were women). Based on this ToT to the staff, 14 trainings have been already conducted for CMO executive committees and general members, including government officials. The total number of participants for these trainings thus far is 315 (119 women and 196 men).

Remaining CMOs, including new CMOs and VCFs, will receive this gender training in year 3 to ensure that gender is mainstreamed in NRM and climate change adaptation.

The objective of the training is to build the competencies of CREL supported organizations, to better mainstream gender considerations in all spheres, structures and activities of their institutions and to achieve equal opportunity and gender balance in their organizations.



Photo 24: Staff ToT training on gender mainstreaming in NRM and climate change adaptation in Cox's Bazar

3.5.2.4 Develop Gender Scorecard

Dr. Charla Britt, along with Gender Specialist and M&E team, collaborated in the development of CREL's Gender Scorecard. The scorecard survey is based on domains from the Women's Empowerment in Agriculture Index (WEAI), a methodology designed by the International Food and Policy Research Institute (IFPRI) for measuring female empowerment.

The Gender scorecard survey has been finalized and is ready for baseline surveys early in year 3 with the main batch of FELCs. It will provide a baseline to measure CREL's impact on gender equality and access to and control over project resources and benefits. The scorecard survey will be conducted with new FELC group beneficiaries (at the beginning of the training and up to a year after the training) to measure performance and impact in different domains of empowerment, concentrating on areas/sectors/arenas that are most relevant for assessing gender equality and female empowerment outcomes for CREL.

3.5.2.5 Finalize Gender Strategy for CREL

CREL completed and submitted its Gender Strategy to USAID. It has been shared with all CREL staff and all partners endorsed its full implementation. Dhaka and field-based staff have been oriented on the strategy and its practical implications.

CREL's Gender Strategy provides practical guidance for equitably engaging all beneficiaries (both women and men) in: (1) reducing unsustainable extraction and dependence on natural resources (forests, wetlands, and ecologically critical areas); (2) increasing knowledge and resilience in response to climate change (adaptation and mitigation); and (3) strengthening joint decision-making and female empowerment in households through financial literacy training and increased incomes from alternative income generation and market linkages. It also ensures a gender-sensitive work environment for all staff. Regional Coordinators and their staff (with the assistance of the Gender Specialist) have started to provide training on the Gender Strategy to CMO executive members.

3.5.2.6 Design and Disseminate Public Awareness, Mobilization Messages, and Activities that will Improve Understanding of Gender-based Issues and Compensating Actions.

A "Gender Equality and Diversity in the Workplace" poster in Bangla was distributed to all CREL offices. The poster provides a list of guidelines for maintaining a diversified, dignified, and empowering working environment that should be put into policy and practice by CREL staff and partners. This is complemented by a two-page brief on CREL's gender approach to all activities.



Photo 25: Female VCF members participated in World Wetlands Day Rally in Chadpai, Khulna

Examples of year 2 activities where public awareness was raised and forums used to improve understanding of the importance of gender equality and female empowerment included: International Women's Day; World Wetland Day; World Environment Day; Co-management Day; International Earth Day; International Day for Biological Diversity; World Tourism Day; and Green Run (where VCF women participated).

In addition, Gender Focal Persons (GFPs) were selected for four regional and 23 site-level offices, with Terms of Reference (TORs) prepared. The GFPs as well as regional-level officers, site officers, and site-level staff (nearly 200 in total) were oriented on CREL's Gender Approach and the roles and responsibilities of GFPs. GFPs are strengthening lines of communication in the monitoring and reporting of gender-related activities and outcomes, and supporting greater gender integration and inclusion at all levels. Regional GFPs meet on a quarterly basis to discuss progress on gender integration, as well as major challenges and strategies for overcoming them.

CREL completed gender orientation training for regional and site-level staff in all project areas, focusing on promoting gender involvement and equity in CREL activities. Pre/post training of the participants documented an increased sensitivity to a broad range of gender issues at personal, interpersonal, institutional, and community levels, and improved skills for incorporating gender considerations. CREL will implement gender-equitable programs by addressing attitudes, perceptions and beliefs related to the role and participation of women as well as ensuring skill training and increased income.

3.5.3 Communications and Outreach

During year 2, CREL communications and outreach, as a cross-cutting component, supported other components achievements.

Communication materials and outreach activities were designed to explain and support CREL objectives and activities. Posters and one-page brochures explaining various elements of CREL were developed and distributed to site-level CREL beneficiaries to improve the understanding of the project, especially NRM, conservation and livelihood activities. The CREL communication team established good rapport with local and national print and electronic media that resulted in wide coverage of CREL activities and achievements. The CREL communication team also supported a number of USAID activities and events, including production of a short video by a US-based company that showcased CREL achievements related to biodiversity conservation and livelihoods along with those of another USAID project.

Outreach activities were conducted to help disseminate messages and materials (developed under Activities COM 1.1, 1.2, 1.4 and 1.5) through interactive engagements with stakeholders that promoted awareness and information-sharing. Youth from PAs and surrounding areas were targeted by outreach events, which they helped organize and manage, and in which they participated. CREL mobilized members of existing Nishorgo Youth Clubs, social development clubs, sports clubs and other clubs, as well as students from schools and universities to help engage stakeholders, particularly youth, in co-management by raising awareness.

3.5.3.1 Raise Public Awareness and Understanding of Co-management.

Awareness meetings with stakeholders from the community and district and Upazila government officials were organized throughout the year. CREL objectives, strategies and achievements were explained and promoted during these meetings. Outreach activities and events disseminated information. Information on building climate resiliency and conservation was provided to the media in an effort to promote mass awareness among targeted stakeholders. Information packets were developed and shared with Dhaka-based government officials. An inventory of existing signage was completed, and new designs and signage information was developed for all sites and PAs.

3.5.3.2 Develop and Use Communications Materials to Inform Populations about Conservation, Biodiversity and Protection

The Communications team developed and distributed the CREL 2014 Calendar. This is available as a wall and a desk calendar and contains messages on climate change and ecosystems, climate resilient livelihoods, NRM and conservation. Ten posters were developed containing information on NRM, co-management, livelihoods activities and gender sensitivity. A booklet on PA birds was produced and distributed to encourage their protection.

3.5.3.3 Orient Journalists on Good Governance Issues in Co-management and Natural Resources

Regular interactions with journalists resulted in the publication of more than 300 articles and features in local and national newspapers covering CREL activities and initiatives for forest and wetland conservation, management and protection. Major electronic media including Channel I, Seventy-One, Jamuna TV, Boishakhi TV and others regularly covered CREL events.

3.5.3.4 Develop Signboards and Communications Materials to Support Demonstration Plots

Signage for 210 plots was developed to explain livelihood demonstration plot activities, benefits and CREL's support to local farmers. A poster and a brochure were developed explain the role of LSPs and the support they can provide to the farmers. Copies of the brochure were distributed to more than 2000 farmers. A comprehensive book on vegetable cultivation and another book on aquaculture were prepared and will be published and distributed during year 3.

3.5.3.5 Develop Communication Materials to Provide Information on Market.

A one-page brief in Bangla was developed on CREL explaining project objectives, working areas, beneficiaries, targets and implementing agencies, and was distributed in all CREL regions. Communication lines were established with business organizations, informing them of new crops (e.g., strawberry and capsicum) that are being produced with the technical support from CREL. Farmer's Field Days were observed in different regions to provide information to farmers about vegetable varieties that are salt tolerant and produce high yields. Forty thousand Crop Calendars were distributed to farmers, and another 40,000 Income Expenditure Books were given to CREL beneficiaries.



Photo 26: Poster on forest and wetland management

3.5.3.6 Develop Activities Focusing on Youth at CREL National and Local Levels

CREL supported the preparation of bylaws for youth Forest Conservation Clubs. Youth were highlighted in three special day observance events (Global Earth Day, International Biodiversity Day and World Environmental Day), involving conservation awareness and related activities. An exchange visit titled 'Rema- Kalenga Youth Meet' was organized in Rema- Kalenga Wildlife Sanctuary for the urban youth from Dhaka.



Photo 27: A conceptual design by the students of BRAC University of an Eco-cottage utilizing locally available building materials.

3.5.3.7 Radio Journalism

CREL Radio Journalism was a major youth-focused outreach activity. This was designed to develop the capacity of selected community-based youth in radio journalism, and to use the community radio as an important media for disseminating climate resilience information among the local community.

Two memorandums of understanding (MOUs) were signed with Radio Sundarban of Khulna and Radio Naf of Cox's bazar. Under these MOUs, 150 youths were selected from communities in the Khula and Cox's Bazar Regions to be trained in Radio Journalism. This will be done during year 3. Internships will be awarded to 36 youths trained under this activity and 72 radio magazines will be produced and on aired during year 3. During year 2, 50 youth successfully completed three days of training in these two regions, and 12 were enrolled as interns in the two radio stations. Content design for the radio program was completed and contains information on CMOs, bio-physical improvement, climate-resilient NRM, livelihood opportunities and improved agricultural technologies.

3.5.3.8 Green Run.

CREL's Green Run was a colorful, thematic mass-awareness event organized to reach-out and engage a large numbers of stakeholders and beneficiaries. Quiz Sprints, Trade Sprints and Literacy Sprints were organized as part of the event. Green Runs were conducted in three regions, attracting more than 3,000 direct participants and 5,000 spectators.

3.5.3.9 Forest Camps.

Fifteen students from BRAC University participated in a three-day Forest Camp at Rema-Kalenga Wildlife Sanctuary in the northeast, during which they were oriented on natural resource co-management, bio-diversity and forest conservation. The students designed tourist facilities for the community and took photos of the forest that were later exhibited in the Asian Tourism Fair in Dhaka that was attended by 35,000 visitors from Bangladesh and other countries. Examples of some of the designs can be seen above.

3.5.3.10 School Programs/Child Consultation

CREL School-based awareness programs were designed to orient students to the concept of conservation and their role and contribution to it. This information was presented through pictorial presentations and games. More than 5000 students from 28 schools in four regions took part in this activity, and they shared their acquired knowledge with their families and communities (**Table 16**).

Table 16: School-based Awareness Programs in Year 2

Region	Number of School	Participants (M/F)
Northeast	8	2000 (886 M/1134 F)
Southwest	6	1580 (675 M/805 F)
Chittagong	6	593 (274 M/399 F)
Cox's Bazar	8	827 (545 M/282 F)

3.5.3.11 Masjid Campaign

Religious leaders (Muslim Imams and Hindu Purohits) are quite influential in the areas in which CREL works. CREL successfully engaged and oriented these leaders on the importance of bio-diversity, NRM and conservation. Fifty-four Imams and Purohits took part in three orientations in the northeast and southwest regions. When these leaders returned to their communities, they shared this information in their regular religious preaching.

3.5.3.12 Meet Your Team (MYT) program (activity cancelled due to lack of relevance)

3.5.3.13 Co-management Fairs (activity cancelled due to over generality)

3.5.3.14 Interactive Popular Theatre (IPT)/ Pot Songs

CREL supported local groups and provided training and scripts with information on bio-diversity, conservation, NRM, climate-resilient livelihood activities, and women's

empowerment. These local theater groups then entertained the community with their performances. More than 5,000 viewers attended three performances organized in northeast and southwest regions.

3.5.3.15 *River Keeper Program (activity cancelled due to insufficient geographical focus)*



Photo 28: World Environment Day rally

3.5.3.16 *Observation of Special Environmental and Natural Resource Days*

CREL created local events to observe World Wetland Day on February 2, Global Earth day on April 22, International Day for Biological diversity on May 22 and World Environmental Day on June 5 in all four regions, as well as International Tourism Day on September 22 in the Cox's Bazar region (**Table 17**). These events included rallies, art and quiz competitions, forest conservation debates, saplings distribution, tree plantations, and demonstrations of low emission technologies. These events drew more than 25,000 participants, including members of CMOs, local government officials and field administration representatives, media, women and youth.

Table 17: Special Environmental and Natural Resource Days Observed by CREL

Special day	Regions	Event highlight	Number of participants
February 2 World Wetlands Day	All regions	Bird Watching: Bird observation and biodiversity orientation session in Sonadia Island by school students.	4,643
March 23 Co-Management Day	All regions	Submission of Memorandum: Community members handed over a petition to the District Administration for conservation actions recommended	5,350
April 22 Global Earth Day	All regions	Demonstration of Low Emission Technology: Demonstration of solar panel as an alternative source of energy for domestic use.	4,000
May 22 International Day for Biological Diversity	Cox's bazar	Garjan seed sowing by the school children	776
June 5 World Environment Day	All regions	Rally, art and quiz competition, saplings distribution and plantation.	10,000
Special Day	Regions	Event highlight	Number of participants
September 27 World Tourism Day	Cox's bazar	Rally	231

3.5.4 Grants and Sub-Grants

The CREL project operates a grant program, which is open to receiving applications from qualified CMOs, CBOs and researchers. The grant process includes stringent reviews of finances, performance, beneficiaries and impacts. CREL staff work with applicants to ensure: that proposals are well-developed and that grantees implement their activities on schedule and with quality; and, that all required documentation is submitted and required approvals have been received from USAID.

3.5.4.1 Build the capacity of CMOs to apply for and manage grants.

CREL organized several training events and workshops in each region for selected CMOs to build their capacity to apply for and manage small grants. As a result, seven wetland CMOs received capacity-building grants and are using the funds according to their approved proposals. Sixteen forest CMOs applied for grants from CREL. These funds will be awarded and capacity-building begun during Q1 of year 3.

3.5.4.2 Make small grants to CMOs and/or CBOs (including VCFs and other resource-user organizations) to restore ecosystems, enable effective biodiversity conservation, and/or enhance community adaptation to climate change.

Eight CMOs were awarded small grants this year to restore ecosystems, enable effective biodiversity conservation, and/or enhance community adaptation to climate change in the Khulna region. They are currently using their funds to support these efforts.

3.5.4.3 Award competitive research grants to address knowledge gaps and test techniques and methods.

In year 2, CREL awarded a JDR 3rd competitive research grant of USD 50,000 to a multi-disciplinary team comprised of researchers from the University of Chittagong, Bangladesh Agriculture University, the Directorate of Forests and a GIS unit of CNRS on “*Valuing the Ecosystem Services Provided by Mangroves in Bangladesh*”. The valuation provides cultural/tourism values and protection/regulatory services values of the Sundarban Reserve Forest with projections about climate change impacts on these values under Intergovernmental Panel on Climate Change (IPCC) scenarios. A team of peer group members and recognized experts was selected to provide technical guidance and policy applications stemming from the results of the research. The team conducted reconnaissance surveys and prepared a detailed 10-month work plan that includes survey instrument tools.

3.5.4.4 Enhance NGO capacity development for transition grants.

During the year, six NGOs were selected for building their capacity to receive USAID's fund directly. This was determined based on an assessment and ranking using USAID's Organizational Capacity Assessment Tool (OCAT). The six NGOs will receive intensive capacity-building training from CREL during year 3. This training program will enhance their expertise in various areas of institutional development (e.g., governance, financial management and compliance, and procurement). At the end of year 3, at least one of these NGO will be certified and qualified to receive up to US\$625,000 annually in direct funding from USAID beginning (in year 4). This training began in September 2014.



Photo29: Participants in Transitional Grants training on 24 September, 2014

3.5.5 Monitoring and Evaluation

The monitoring team supports CREL in setting baselines, measuring progress in project implementation and various indicators (e.g., changes in ecosystems, capacity of stakeholders and co-management organizations, socio-economic development of beneficiaries, and policy progress) which helps decision-making by the managers and implementing partners. Monitoring activities are in line with CREL's Monitoring and Evaluation Plan (which was approved by the USAID on June 6, 2013 and later revised and subsequently approved by USAID on June 3, 2014). The M&E team comprises an Advisor, a CreLink Manager, and four Monitoring Officers (one in each region), and receives support from Winrock's Ecosystems Services Unit and the GIS/RS team from BCAS, all of which are coordinated by CREL's M&E Specialist.

M&E in year 2 focused mainly on the development of baselines (e.g., sample surveys of beneficiaries), ensuring CreLink was fully functional, GIS mapping of project sites and landscapes (including land cover analysis of imagery, forest carbon inventory and monitoring of biophysical indicators on the ground as well as support for developing management plans to facilitate management decision-making). Specific progress is detailed below.

During year 2, CREL's M&E activities made numerous contributions of wider value to Bangladesh – particularly in terms of forest management and REDD+ readiness. For example:

- Used GIS and remote sensing to map land cover and land use at 10 sites.
- Developed standard operating procedures for field measurement of terrestrial carbon and forest biophysical condition.
- Implemented measurements of forest carbon and biophysical condition in eight sites from 377 plots quantifying carbon stocks, GHG emissions and biophysical condition, all of which contributes to the REDD+ initiatives led by USAID and other donors (i.e., FAO and UNDP).

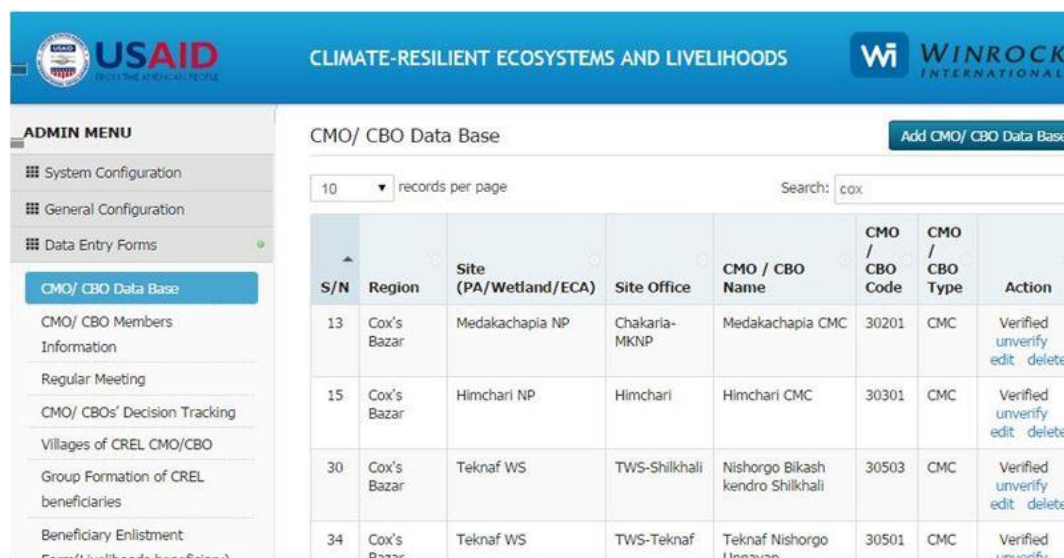
This work has developed a solid basis of cooperation and contributed to technical support and information (data, imagery) with the Resource Information Management System (RIMS) Unit as well as field personnel (on-the-job orientation on forest carbon inventory) of the FD.

3.5.5.1 Operationalize CreLink.

CREL M&E and DivineIT (a local IT firm) teams developed the architecture (Php at front-end with MySQL database) of CreLink and backstop the regional as well as site-level users of CreLink. Real-time data entry was the main challenge at remote site offices where frequent power-cuts and poor internet connections/speed were major hurdles (even though download-upload requirements were minimized in CreLink's ultra-thin architecture).

During year 2 hands-on orientations for about 150 users was completed and all were provided with user access. The site teams then regularly populated project implementation results using 22 field forms. Users are also able to review progress using 50 pre-defined reports generated by CreLink. Further improvements and constant backstopping for users were provided by the CreLink Manager and DivineIT team throughout year 2.

Figure 3: CRELink



The screenshot displays the CRELink web application interface. At the top, there are logos for USAID, Winrock International, and the project title 'CLIMATE-RESILIENT ECOSYSTEMS AND LIVELIHOODS'. On the left is an 'ADMIN MENU' with options like System Configuration, General Configuration, and Data Entry Forms. The main content area is titled 'CMO/ CBO Data Base' and includes a search bar with 'cox' entered and a table of data. The table has columns for S/N, Region, Site (PA/Wetland/ECA), Site Office, CMO / CBO Name, CMO / CBO Code, CMO / CBO Type, and Action. Four rows of data are visible, each representing a different site and its associated CMO/CBO information.

S/N	Region	Site (PA/Wetland/ECA)	Site Office	CMO / CBO Name	CMO / CBO Code	CMO / CBO Type	Action
13	Cox's Bazar	Medakachapia NP	Chakaria-MKNP	Medakachapia CMC	30201	CMC	Verified unverify edit delete
15	Cox's Bazar	Himchari NP	Himchari	Himchari CMC	30301	CMC	Verified unverify edit delete
30	Cox's Bazar	Teknaf WS	TWS-Shilkhali	Nishorgo Bikash kendro Shilkhali	30503	CMC	Verified unverify edit delete
34	Cox's Bazar	Teknaf WS	TWS-Teknaf	Teknaf Nishorgo Innayan	30501	CMC	Verified unverify

3.5.5.2 Baseline Surveys of Economic Benefits for a Sample of Target Stakeholders

As part of the selection of livelihood beneficiaries, a brief profile was completed and archived for each participant in CreLink. Out of some 33,000 enlisted beneficiary households to date, 18,931 beneficiaries received training for starting improved livelihood activities. The majority are involved in aquaculture and horticulture, which are highly seasonal enterprises. Some could not start their enterprises during year 2 and most beneficiaries trained had not completed a production cycle during the year.

In year 2, a total of 16,454 natural resource dependent households started improved or new climate resilient livelihood enterprises. Out of these 4,887 participants (one trainee per household) are considered beneficiary households with potentially measurable income changes for year 2. This number captures the participants trained in vegetable and horticulture technologies who had the opportunity to apply these in the first half of 2014. This means they received training early enough to have made use of this knowledge and completed a production cycle. The other beneficiaries in year 2 are expected to have started making use of new skills and technology in their enterprises, but were unable to complete harvests within year 2 because of seasonality and production cycles. For example, aquaculture enterprises could not complete harvests by the end of September 2014, so gross margins and net incomes cannot be calculated for those beneficiaries in year 2.

The M&E team developed a questionnaire to assess both the baseline and impact conditions for a detailed breakdown of incomes (including but not limited to CREL-supported enterprises). This includes the use of improved farming and management/production practices as well as uncultivated (wild) natural resources. Out of the year 2 beneficiary households, a sample survey of 189 households that started new enterprises was completed covering both baseline and impact periods. A stratified random-sampling procedure was applied. Respondents were stratified by CREL region and site, trade and sex, and simple random samples were taken using the CreLink database from within each strata. Samples have also been drawn for surveys to be undertaken early in year 3 of the other main types of enterprises (e.g., aquaculture, poultry and handicrafts) that started in year 2 but will complete production cycles in year 3.

Out of the surveyed beneficiaries, 157 had completed cost and return data for crops sown in January-June 2014 (issues of missing data and crops not harvested by 30 June 2014 will be resolved when the impact survey is completed in a second round survey in January 2015). Overall 44% of households with complete data achieved an increase in their crop net income (value of harvest less costs, as used in gross margin calculations) of more than BDT200 in January –June 2014 compared with the same period in 2013 (**Table 18**).

Table 18: Summary of Agriculture Related (Vegetable/Horticulture) Beneficiaries and Impacts January-June 2014

Region	Beneficiaries			Sample beneficiaries	No. adopting CR ^a	No. with harvest data for 2014 crops	Increase in net crop income Jan-Jun '14 v '13			Est. no. of HH benefiting ^b	Estimated value of benefit	
	Female	Male	Total				No. beneficiaries	mean increase (BDT)	% benefiting		BDT	US\$
Chittagong	154	128	282	20	6	20	6	19,890	30	85	1,682,700	21,850
Cox's Bazar	514	373	887	36	0	36	11	8,970	31	271	2,430,430	31,560
Southwest	1,874	626	2,500	79	5	47	21	2,900	45	1,117	3,234,500	42,010
Northeast	540	678	1,218	54	37	54	31	7,300	57	699	5,101,000	66,250
Total	3,082	1,805	4,887	189	48	157	69	7,320	44	2,172	12,448,600	161,670

Notes:

Comparisons are only for January-June 2014 impact period compared with January-June 2013 baseline period, data for a full annual cycle will only be available in 2015.

Beneficiaries considered are only those receiving training in vegetable and related horticulture technologies including high value crops (capsicum and strawberry) not later than May 2014.

Sample was stratified by sex of participant, but this breakdown not presented to simplify table.

^a 2 or more climate resilient cultivation practices (excluding significant changes in crops grown)

^b Benefiting households taken to be those earning at least BDT200 more from cultivation in impact period compared with baseline period.

The data indicate that just over 2,100 households realized benefits from CREL support in horticulture-vegetable cultivation, and these households on average earned an extra BDT7,320 (just under US\$ 100) each in this six month period. This is expected to have had a direct impact on improving the lives of 11,100 individuals (over 6,500 of whom are women and girls) living within these households (**Table 19**).

Table 19: Summary of Individuals Estimated to have Benefited from Improved Agricultural (Vegetable/Horticulture) Cultivation January-June 2014

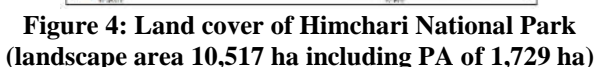
Region	Household members			% households benefiting ^b	Household members benefited		
	Female	Male	Total		Female	Male	Total
Chittagong	723	664	1,387	30	217	199	416
Cox's Bazar	2,799	2,456	5,255	31	855	750	1,606
Southwest	8,407	2,876	11,283	45	3,756	1,285	5,041
Northeast	2,986	4,143	7,129	57	1,714	2,378	4,093
Total	14,915	10,139	25,054	44	6,543	4,613	11,156

Notes:

Household membership based on actual members reported in profiling all beneficiary households and entered into CreLink

^b Benefiting households taken to be those earning at least BDT200 more from cultivation in impact period compared with baseline period.

CREL's GIS and M&E team developed landscape boundary (CMO zone of influence) maps based on Google Earth, taking into account the villages using each biodiverse site and following natural/man-made physical features, in consultation with the site teams (**Figure 4 and 5**). For 18 CREL sites/PAs, boundaries were delineated for the landscape and biodiverse area. In 10 of these sites (covering both PA and landscape) land cover maps were developed using high-resolution imageries (RapidEye and WorldView, the latter from USAID's GeoCenter). These maps will form one of bases for monitoring changes in the landscape and evaluating the long-term impacts of co-management in future. The CREL mapping products, geo-spatial database and satellite imageries have been shared with the RIMS Unit of the FD. The GIS team will continue the mapping of remaining inherited sites and new sites in year 3.



3.5.5.4 Forest carbon inventory of selected forest protected areas.

A carbon inventory was completed for eight forest PAs (Lawachara NP, Satchari NP, Khadimnagar NP, Rema-Khalenga WS, Modhupur NP, Kaptai NP, Chunati WS, and Himchari NP) comprising of 377 field sample plots, RapidEye based land cover analysis, and subsequent data analysis. Carbon stock in five pools (live vegetation, dead wood, non-tree vegetation, litter and soil) is reported. Other forest biophysical conditions were measured, such as forest recruitment (from saplings to mature trees), tree species diversity, and soil condition. Five field teams, including FD personnel, university graduates and CREL staff (20 persons in total), were given hands-on orientation with field equipment and standard operating procedures (SOP) see **Photo 30**. They actively participated in field data collection.

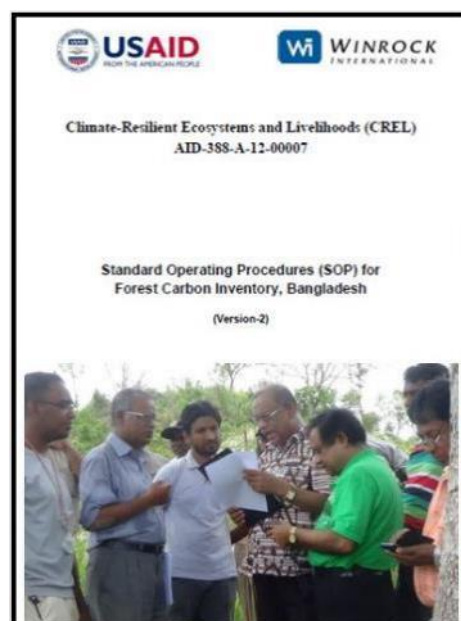


Photo 30: SOP for Forest Carbon Inventory 2014

The Forest Carbon Inventory results and the SOP were shared with FD officials, Sylva Carbon team and other REDD+ actors in Bangladesh. The forest inventory consultant, Winrock Eco experts and FD senior officials were actively engaged in the process. The results from this extensive field work are still being analyzed; however, preliminary results have enabled the quantification of carbon stocks and biophysical condition in two of the major forest types in Bangladesh (Hill and Sal forest), along with the carbon stocks for plantation forests and non-forest land uses (**Figure 6; Table 20 and 21**).

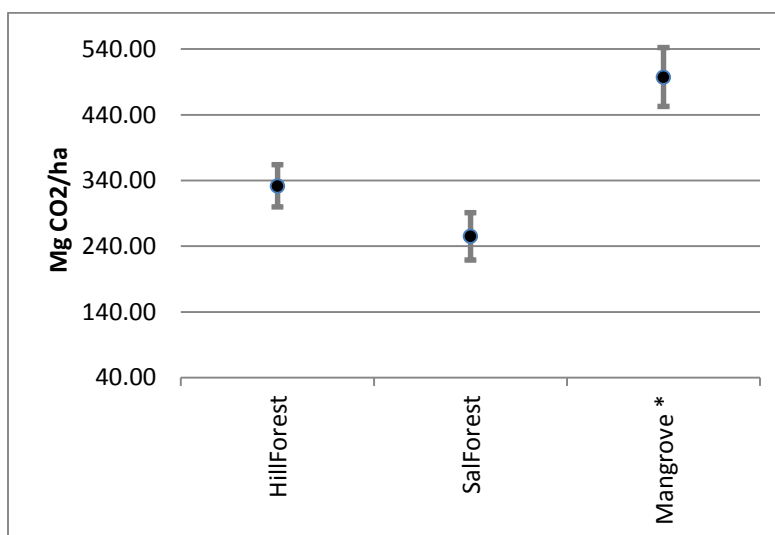


Figure 6: Results for mean CO₂ stocks with error bars showing 90% confidence intervals for Hill forest, Sal forest and mangroves (based on 2010 Sundarban Inventory) (not including soil carbon) Mg (Mega gram) = 1 t =1000 kg

Table 20: Results for Mean Natural Forest CO2 Stocks

	Mean Mg CO ₂ ha ⁻¹	SD	n	SE	Confidence Level (90.0%)	Confidence as % of mean
Hill Forest	331.83	202.01	108	19.44	32.25	9.72%
Sal Forest	255.01	115.75	30	21.13	35.91	14.08%
Mangrove *	497.41	332.02	150	27.11	44.87	9.02%

* Based on 2010 Sundarban Inventory

Mg (Mega gram) = 1 t = 1000 kg.

Table 21: Results for Mean CO2 Stocks for Plantation, Rubber, and Non-Forest

	Mean Mg CO ₂ ha ⁻¹	SD	n	SE	Confidence Level (90.0%)	Confidence as % of mean
Plantation	233.1	195.7	99	19.7	32.7	14.0%
Rubber	218.1	56.2	7	21.2	41.3	18.9%
Degraded land	71.1	83.9	102	8.3	13.8	19.4%
Tea Garden	36.9		1			
Agriculture	9.1	15.0	11	4.5	8.2	111.0%
Bare Land	0.0					
Settlement	0.0					

Mg (Mega gram) = 1 t = 1000 kg.

This has enabled the quantification of GHG emissions from different land-use transitions that are common in Bangladesh (**Table 22**). It has also established unique metrics for assessing the relative changes in biophysical condition that result from land use changes (e.g., the loss of species diversity, soil quality etc.).

Table 22: Emission Factors in Mg CO2 ha for Hill and Sal Forest Converted to Other Land Uses

		Converted from:	
		Hill Forest	Sal Forest
Converted to:	Plantation	98.70	21.88
	Rubber	113.74	36.92
	Degraded land	260.72	183.90
	Tea Garden	294.94	218.12
	Agriculture	322.76	245.94
	Bare Land	331.83	255.01

Mg (Mega gram) = 1 t = 1000 kg.

This data combined with baseline land cover changes (presented in Section M5) enable the quantification of total GHG emissions and changes in biophysical condition for CREL sites. This will provide important data for CREL M&E as well as contribute to national objectives related to REDD+.

3.5.5.5 GIS/Remote Sensing Data and Atlas for CREL Sites.

CREL's GIS team developed land cover maps (using high resolution RapidEye imagery) of 10 sites, along with area statistics and an accuracy assessment (**Figures 7 and 8**). The land cover classes were developed using the FAO's Land Cover Classification System, after a thorough review of land classification used in Bangladesh. The goal was to harmonize previous classification systems and enable CREL maps to be integrated into and comparable with future mapping efforts.

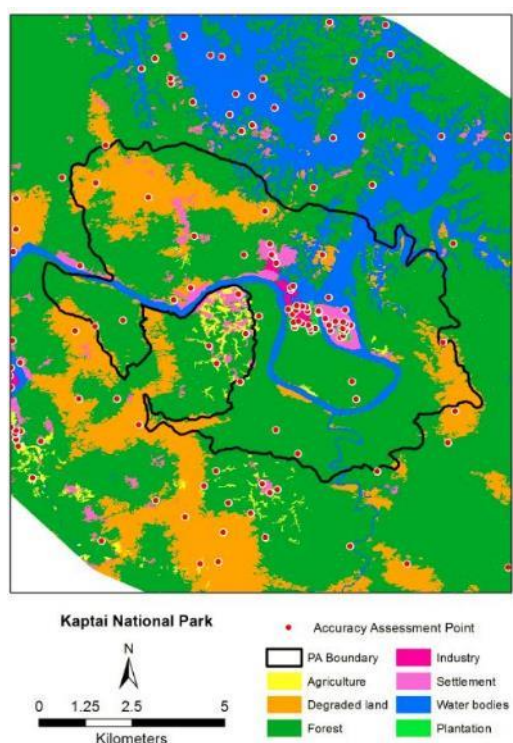


Figure 7: Kaptai National Park (land cover from RapidEye, 2013)

Expected (Mapped)	Land uses	Observed (Reference imagery)							User's accuracy
		Agriculture	Degraded land	Forest	Built-up areas	Plantation	Settlement	Water bodies	
Agriculture		19	3	1			2	25	76%
Degraded land			20	5				25	80%
Forest			4	19			2	25	76%
Built-up areas					24		1	25	96%
Plantation					2	21	2	25	84%
Settlement			3	2	1	2	17	25	68%
Water bodies				2				23	92%
Total		19	30	29	27	23	21	26	175
Producer's accuracy		100%	67%	66%	89%	91%	81%	88%	

Figure 8: Accuracy matrix of land cover classification (RapidEye vs Google Earth)

The team also built a geo-spatial database and oriented site teams on how to use GPS. Initiatives to integrate survey data and socio-economic data with GIS data were also taken. These maps will guide and be incorporated into the landscape and NRM plans that CREL is preparing under IR3.

For assessing deforestation and land use changes, CREL is making use of the global forest and deforestation dataset developed by Hansen, Matt, *et al.* (2013).¹ CREL is currently piloting new and innovative ways to use the Hansen dataset for land use monitoring and mapping. These methods provide an assessment of land use changes and set baseline deforestation rates for all CREL PAs (**Figure 9**). This data can then be used with the forest inventory data to quantify relative changes occurring at CREL sites, including GHG emissions and other biophysical changes. The data are still being analyzed and will be formally delivered to USAID once this is completed.

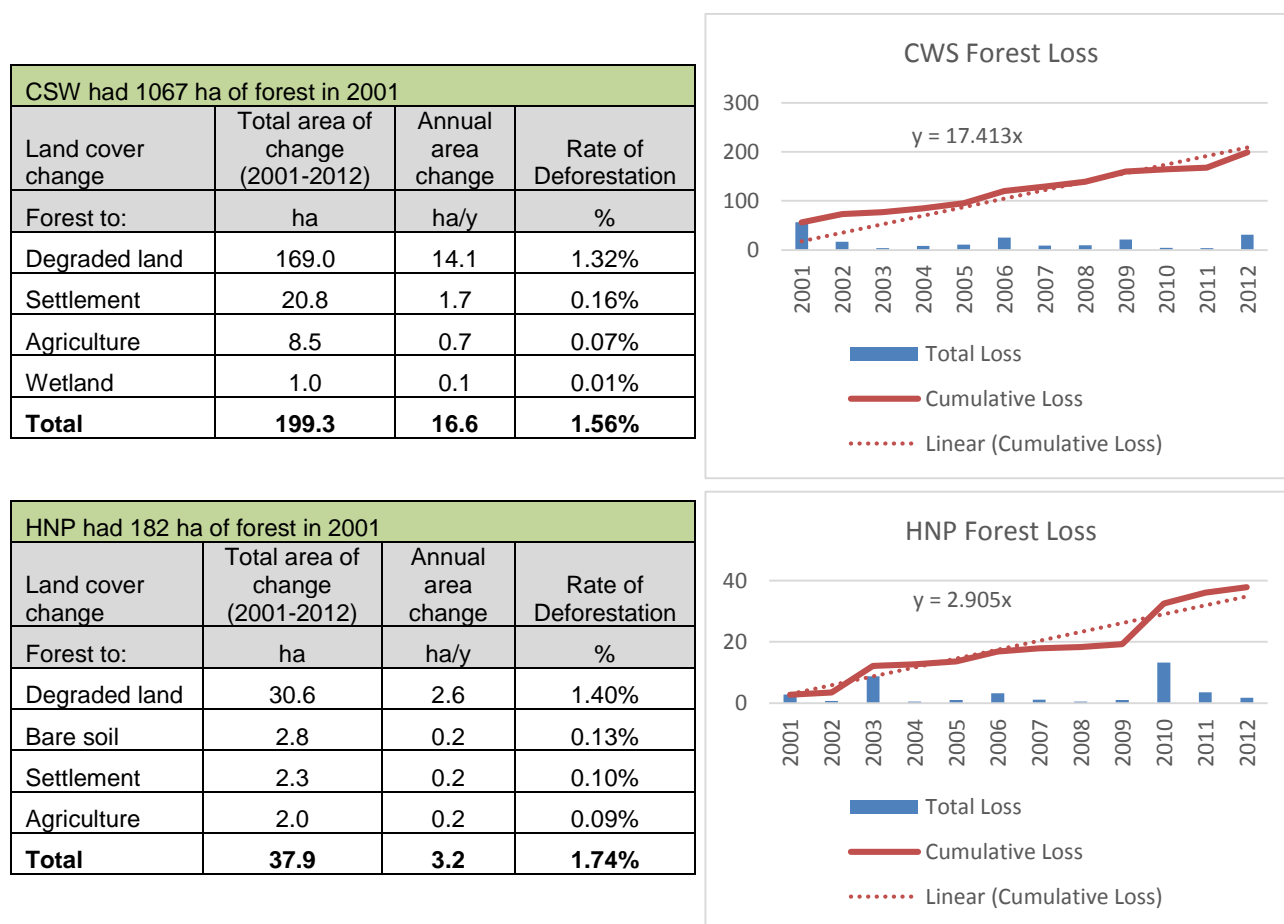


Figure 9: Baseline land cover changes occurring for two CREL PAs: Chunati Wildlife Sanctuary (CWS) at Chittagong and Himchari National Park (HNP) at Cox's Bazar.

¹ Hansen, M. C. et. al. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53.

In addition to the above work, CREL provided a report to the RIMS Unit of the FD that assessed national forest cover and deforestation based on the newly released Hansen dataset. The project has also worked with USAID's Geo-center resources and supported the USAID-sponsored SylviaCarbon Workshop in July 2014. Winrock's Eco team provided significant support and contributions to the CREL team for this activity.

3.5.5.6 Biological monitoring of biophysical changes.

CREL has set robust biophysical baselines. The project will continue monitoring these indicators for project sites in order to assess changes in the ecosystems and the extent to which positive improvements can be attributed to CREL interventions. Different approaches have been taken based on the type of ecosystem, including fish catch monitoring and wintering waterbird surveys for wetlands, forest inventory and resident forest bird survey in forest PAs, land cover mapping based on high resolution imageries, and secondary data from other sources. CREL M&E team, WorldFish and the Bangladesh Bird Club continue to collect site-specific data on indicators for assessing biophysical conditions.

Volunteers from the Bangladesh Bird Club conducted mid-winter waterbird census. They were assisted by local guides who received practical training for the surveys, following the methods of and contributing to the Asian Waterbird Census in CREL's main wetlands (six sites). In addition, a Resident Forest Bird Survey was conducted in 14 forest PAs using methods directly comparable to those used previously (e.g., in the Nishorgo Support Project and IPAC) so that comparison with previous baselines and monitoring is possible.



Photo 31: Bangladesh Bird Club surveyor (left) training local assistants, Khadimnagar NP

Trends in forest bird populations show a complex pattern, which varies by site. **Figure 10**, below, is an example. In general, for those PAs previously surveyed under IPAC, populations of understory species continue to be above baseline levels, indicating recovery of shrub layers and saplings, but populations of canopy species may be declining slightly.

Trends in waterbird populations in the two freshwater wetlands with the longest series of data show contrasting trends (see **Figures 11**). Waterbird numbers in Baikka Beel sanctuary (Hail Haor) in 2014 were close to the highest recorded since co-management and protection started. However, in the entire Hakaluki Haor (a much larger area) waterbirds reached their lowest ever level in February 2014, despite sanctuaries protected by VCGs. CREL will work with the VCGs and government agencies in year 3 to develop management plans that will attempt to address this decline.

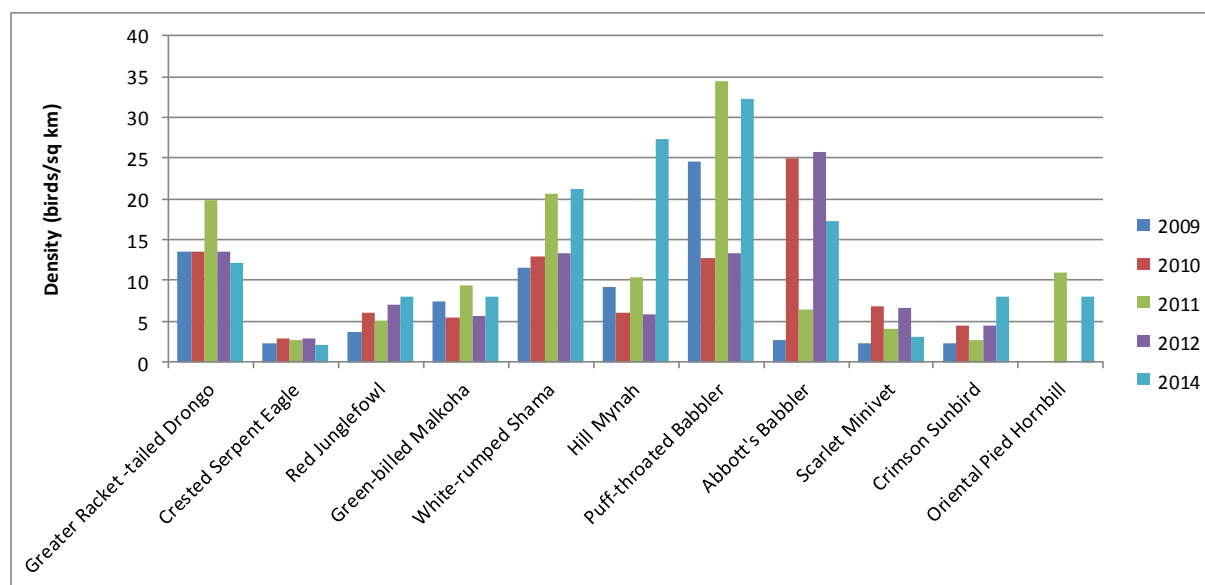


Figure 10: Example of density of indicator birds (birds/km²) in Kaptai National Park during June-September 2014 compared to 2009-2012.

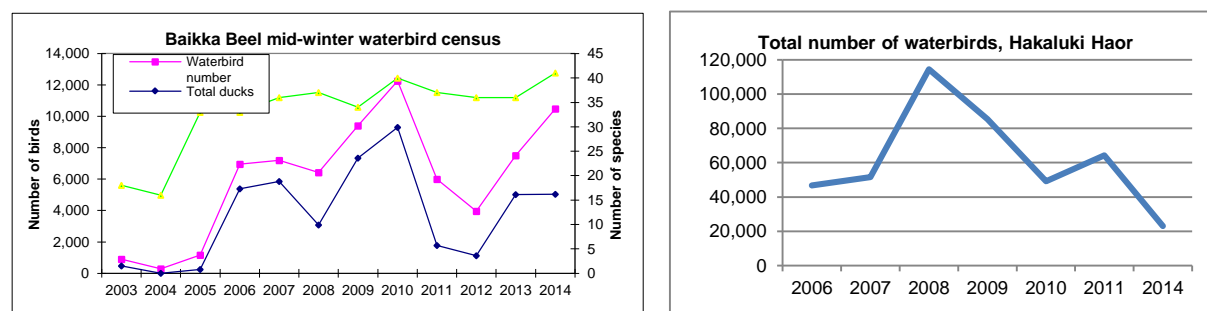


Figure 11: Trends in waterbirds in Baikka Beel sanctuary, Hail Haor (left) and Hakaluki Haor (right).

Note: In Baikka Beel waterbirds returned after the sanctuary was established (2004) and recovered in 2014. In Hakaluki Haor the 2014 survey was more comprehensive than previous years but numbers are falling due to high fishing pressure and limited conservation in many beels.

In year 2, fish catch monitoring continued in Hail Haor, Hakaluki Haor, Sonadia ECA, and Sundarbans Reserved Forests, and was started in Halda River. Despite waterbodies and associated sanctuaries that had been managed by RMOs in Hail Haor being overfished in the past two years (when RMO rights were not renewed by MOL), fish catches and diversity have remained approximately stable (**Figure 12**). In fact, a modest increase over 2012 measures in catch per unit area to 15 kilograms/hectares was measured (although this is within the normal range of variation associated with annual fluctuations in water levels).

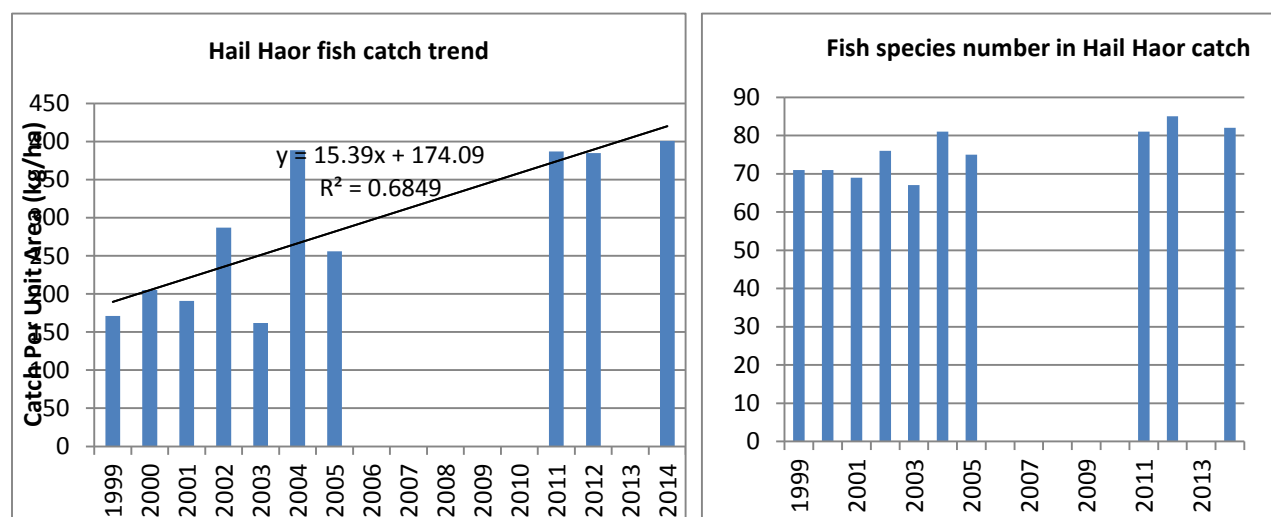


Figure 12: Trends in fish catch and species diversity in Hail Haor

Note: Trend extrapolated from weekly monitoring in a set of sample areas. Years are 12-month periods reported here against the year in which a majority of those catches declined.

3.5.5.7 Contribution to National REDD+ Readiness Roadmap.

In accordance with the Bangladesh REDD+ Readiness Roadmap (2012), CREL has collaborated with REDD+ actors in Bangladesh and contributed to the development of a Readiness Preparation Proposal (R-PP, 2013). The Standard Operating Procedures (SOPs) developed for the Forest Carbon Inventory 2014, the SOPs for Accuracy Assessments of land cover maps with high resolution imagery, the National REDD+ Atlas and various map products were all shared with and provided to the FD. This has strengthened FD databases and provided tested tools which will be useful for the upcoming National Forest Inventory. Significant contributions to building FD capacity also include: capacity building of FD personnel on forest carbon inventory, sharing of CREL inventory findings and map products, application of high resolution data and global forest change data at local level (**Figures 13 and 14**).

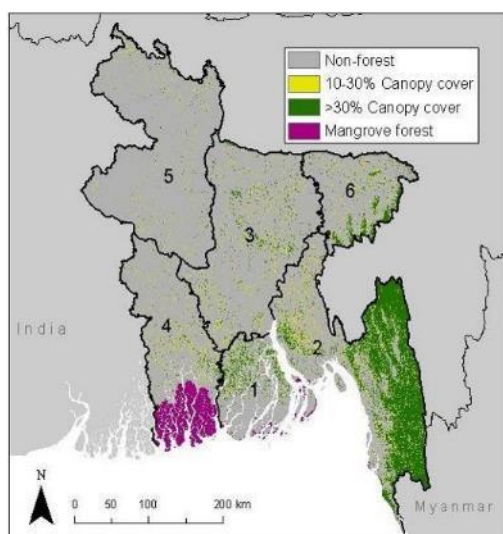


Figure 13: National forest area: >10 Canopy- 2.71 m ha, >30 Canopy- 2.03 m ha (Matt Hansen et. al. 2013)

		Converted from:	
		Hill Forest	Sal Forest
		Mg CO ₂ ha ¹	
Converted to:	Plantation	98.70	21.88
	Rubber	113.74	36.92
	Degraded land	260.72	183.90
	Tea Garden	294.94	218.12
	Agriculture	322.76	245.94
	Bare Land	331.83	255.01

Figure 14: Emission factor table showing the change in carbon stocks given a specific land cover change (from all eight inventory sites). Mg (Mega gram) = 1 t =1000 kg.

3.5.5.8 Mainstreaming Gender in CREL

CREL has contributed to its gender mainstreaming goal by increasing the involvement of women in livelihood training and co-management as well as disaggregating indicators by sex and including gender-sensitive indicators. This enables CREL to track and report on the impact of project activities on women and gender relations. Our M&E data verify that during year 2, more than 60% of beneficiaries of CREL training and livelihoods activities are women.

In line with CREL's updated Gender Strategy (Gender Opportunities and Action Learning Strategy, July 2014), a Gender Scorecard Survey questionnaire has been developed and tested. This will be undertaken with a sample of newly-enrolled FELC participants to establish a baseline, with follow-up at least a year later (at the end of year 3 and/or year 4). The scorecard assesses women's empowerment based on four major domains: production, resources, income, and leadership. It was adapted from the WEAI, which was developed by IFPRI.

3.5.5.9 Progress Against Indicators, Shortfalls and Remedial Action

Annex II details the achievements at the end of year 2 as measured against the 19 indicators agreed in CREL's revised M&E Plan (June 2014). The discussion in this section compares cumulative achievements from project inception to the end of year 2, with the cumulative targets for the same 2-year period.

CREL exceeded eight project indicator targets (indicator numbers 1, 5, 6, 11, 14, 17, 18 and 19), met three targets (indicator numbers 2, 7 and 12), partially achieved 6 targets (indicator numbers 3, 4, 8, 13, 15, 16) and two targets were not applicable for the period (indicator numbers 9 and 10).

Notable among the target achievements are that five (indicator numbers 1, 2, 6, 12 and 17) of the six DO4 indicators were met or exceeded, and the remaining one will be fully achieved early in year 3; and, of the four FtF indicator targets, two targets (indicators 18 and 19) were exceeded and the other two targets were substantially achieved (50% and 87%).

The discussion below reviews those indicator targets that were only partially achieved, explains the basis of the shortfall and notes the remedial action to be taken during year 3 to meet the cumulative target at the end of that year. With one exception, all six of these indicator targets showed achievements from 50% to 100%. As explained in Section 5 of this report, hartals and political unrest throughout the entire 1st quarter, complications resulting from the lack of GoB departmental technical project proformas (TPPs) (slowed further by the previous IPAC project not having completed the project completion report), and changes in USAID regulations on the implementation of construction activities were factors that slowed implementation of activities that contributed to these targets. We expect that all of these hurdles will be reduced or eliminated in year 3.

Indicator 3: Laws and policies (66% achieved – two submitted (one of which implemented) against three targeted). Solid progress has been made in several policy areas and particularly in the intermediate steps of policy research and formulation, but overall progress and achievements depend on a dialogue and interactions with government officials, policy makers, other stakeholders in developing measures owned by the stakeholders. Ultimately, approval depends on decisions by the GOB. . CREL will continue pressing for progress and positive action by the GOB during year 3

Indicator 8: Stakeholders using climate information (87% achieved). Capacity building in year 2 will deliver results that catch-up with use of information in year 3. Indirect pathways of delivering information and subsequent use remain to be measured, but will be in year 3, and will contribute to this target.

Indicator 13: Areas with improved biophysical condition due to direct interventions (71% achieved). Wetland habitat restoration can only be implemented in the dry season, and had to be postponed to year 3 while contractual matters related to construction were resolved. Construction and rehabilitation activities will accelerate in year 3 and we expect to achieve the cumulative target for this indicator at the end of next year.

Indicator 15: CMOs with improved revenue sharing (0% achieved - none against a target of three). Preparatory activities and conditions necessary to lay the groundwork for achieving increased revenue have progressed well. Agreements with the FD were reached for two PAs, but entry fees could not be introduced until basic visitor facilities are developed, which will take

place during year 3 during the 2014-15 dry season. Some increases in revenue sharing depend on policy reforms that are already in the approval process. When these steps are completed, we expect that revenue will increase substantially. This was slowed due to construction compliance issues discussed in the challenges section below.

Indicator 16: New villages implementing sustainable NRM (68% achieved). This indicator target reflects the number of villages that are included in new project sites. More village forums and groups will be formed in year 3, but the target will be reduced to reflect the actual number of villages using new sites.

Indicator 17: Number of people with economic benefits (Overall target 100% achieved)
Regarding the livelihood return portion training was unable to start during the 1st quarter as planned because of political disturbances discussed in the challenges section below. Because of this many of the beneficiaries trained were unable to do sufficient production cycles for vegetables and in aquaculture were unable to harvest production because of the late start. Under the livelihood activities most beneficiaries trained in year 2 started to receive economic benefits, but due to the seasonality of their activities could not harvest from a full production cycle. The full impact for this batch of beneficiaries will only be measurable in year 3. However, in terms of fish catches, monitoring revealed slightly higher fish catch rates in Hail Haor. Consequently, at least 3,700 fishing-dependent households (over 18,000 people) continued to receive increased economic benefits as a result of continued co-management in Hail Haor. When the benefits to fishing households in Hail Haor are counted for year 2, the indicator target was exceeded this year.

5 Challenges and Solutions

TPPs and PCR. The previous IPAC project did not submit the required GOB project completion report (PCR) to the Implementation Monitoring and Evaluation Division (IMED), and this posed a challenge for CREL related to obtaining approval of the MOEF (departmental) TPPs for CREL. The MOEF, through a letter to the FD wanted the PCR for IPAC and this was made a precondition for processing the TPP for CREL to meet IMED requirement. The MOEF has recently appointed a new secretary and CREL has briefed the secretary on CREL and at the same time convinced the secretary to carry forward the TPP process for the departmental TPPs, and CREL promised support to the FD in preparing the PCR for IPAC. During September of this reporting year, CREL supported the FD and the draft PCR for IPAC was submitted to MOEF by the FD. The TPP of both the FD and the DoE were held up, but CREL helped solve this problem. The issues associated with the lack of TPPs at the inception of CREL, as well as the uncompleted PCR for IPAC underline the importance of future projects recognizing the GOB's requirements for these project-execution documents.

Construction under CREL. Proposed small scale infrastructure for the PAs was an integral part of most small grant proposals, as well as infrastructure development such as ecotourism. USAID rules on construction were revised in August 2013 and affected CREL retroactively. Because we must comply with these requirements, it was necessary to return to the respective CMOs and forest department officers gain the agreement with elimination of construction from their grants. This posed a challenge and created some delay that among other impacts prevented us from fully achieving our wetland biophysical improvement target for year 2. However, through Modification 5 executed in April 2014, CREL put the mechanisms for complying with USAID directives on construction in place, and will disburse the grants and achieve the associated collective target for the first three years of the project by the end of year 3.

CMO capacity and sustainability. FD in one mind thought the capacity of the CMOs need to be enhanced to be able to handle the revenue shared to them for the management of the forests and on the other hand is worried that the opening of the forest land to the community might increase the possibilities of forest land encroachment if not over harvesting. The CCF wants to see the CMO capacity for initiating entry fee collection. In this regard CREL has assessed the capacity and set criteria for graduation in consultation with the FD. Sustainability action plans have been developed during year 2 for respective CMOs will be implemented in year 3 to build the capacity that will convince the FD to initiate revenue sharing in PAs where it is currently not operational. The Forest Department is not enthusiastic about taking forward the sharing of NTFP collection, if at all, and not by the 50% suggested by the PM. At source sharing has yet to be taken forward to the finance division through the FD and MOEF. CREL has appointed a barrister in consultation with the CCF and currently the consultant/barrister is working with the CCF, senior forest officials, DFOs, CFs and CMO representatives to redraft the PA rules. The intention is to include in the revisions to the PA rules gazette notification the policy matters such as the entry fee sharing, sharing at-source NTFP collection and elaboration on roles of the PF.

Kaptai issue. Continuing activities under the Kaptai PA remains a challenge as ethnic leaders want changes to the Government gazette provisions with regard to the composition and provisions for Forest CMOs. They wanted this change as a precondition for CREL to work in the Kaptai area. This action is beyond CREL's mandate and above the MOEF level of decision, and is a national political issue. However, CREL is trying to maintain discussions with the ethnic leaders and reach agreements that will allow the project to conduct mutually acceptable activities in Kaptai.

Endowment fund. In year 3, CREL will request permission from USAID to establish an endowment fund for selected CMOs. The provisions and mechanics for awarding and monitoring the use of this fund will be fully detailed in a revision to the CREL Grants Manual. The endowment fund will help catalyze CMOs to become organizationally, functionally and financially sustainable. The fund is not intended to serve as a primary source of revenue for any CMO, but rather as a temporary and sustaining measuring that will allow the CMOs to build their capacity to seek, obtain and manage other primary sources of revenue, e.g, entry fees, ecotourism facilities, private sector grants/MOUs, etc. These funds will allow the project to leave sustainable CMO institutions where there is no other source of revenue sharing opportunity.

Hartals and political unrest. These disturbances greatly hampered our movement and work in the field work during the first quarter of year 2. Some of the activities in the Year 2 Work Plan were delayed until the end of Q2 in March of 2014. These delays slowed full implementation of some initial training programs. For example, livelihood skill training was delayed and therefore the time available to those beneficiaries to produce enough cropping cycles after training to increase their income in year 2 was reduced, and training in improved aquaculture was delayed with the result that the production season was too short to evaluate their income increases. However, all of this training and its subsequent impact on increased production and income will be measured and contribute to increases that will be recorded during year 3.

6 Going Forward

Year 3 is a vital year for the project to build on the systems and capacities developed so far. CREL's activities will peak, particularly in the field, as elaborated in CREL's Year 3 Work Plan. A major focus for year 3 will be strengthening CMOs, and developing plans and actions for the long-term sustainability of natural resources and the institutions that manage those resources. This will be enabled through support for improved policies, capacity-building, training and grants to CMOs. It will be underpinned and complemented by activities and interventions that diversify livelihoods (away from exploiting biodiverse ecosystems), restore biophysical conditions, enhance eco-tourism, and provide targeted communication and outreach support.

Sustainability. A cornerstone of CREL's sustainability strategy is helping organizations implement selected functions and activities related to ecosystems, NRM and livelihoods that can continue on a long-term basis without direct external support (donor assistance). A set of key sustainability criteria (resource mobilization, adaptive management, inclusive governance,

organizational functions, and legitimacy) have been developed, and the performance of CMOs will be assessed at the beginning and end of year 3. Linked with these criteria, and using an elaborate baseline and existing action plans for capacity building, over 50 milestones have been set to measure progress towards sustainability and the eventual graduation of co-management bodies and wetland community organizations.

During year 3, the focus will be on addressing gaps through targeted training and advice to build CMO capacity, autonomy and financial sustainability. Regular sources of funds for implementing CMO plans are vital. Visitor fees and eco-tourism have the potential to generate sufficient funds, and a mix of facility development, the introduction of entry fees in more sites, and policy-practice changes to improve and enlarge revenue-sharing from government to CMCs will be pursued. The ability to tap diverse non-project opportunities will be also developed, particularly facilitating linkages with the private sector, government agencies/service providers and NGOs. More generally, CREL will continue to work on informing key policy changes (in wetland leases, forest management and revenue sharing) that will enable long-term collaborative conservation of biodiverse ecosystems.

A major increase in the number of people benefiting economically from CREL activities is expected in year 3. This will result largely from activities that enable enterprise development for some 45,000 households and from higher catches in restored sustainable fisheries. A cornerstone to this expansion is CREL's extensive vocational and financial training programs. FELC training will continue to expand as the need and demand requires. Enterprise training and private sector linkages with LSPs will focus on enabling poor men and women to participate profitably in the markets instead of over-exploiting forests and wetlands. This will increase knowledge and the adoption of new technologies, as well as access to inputs, credit, markets, and information. Further collaborations with private sector partners, will result in vocational skills enhancement, new jobs and increased income for larger numbers of beneficiaries.

Climate Resiliency. A key outcome for CREL is increased capacity of ecosystems and livelihoods to withstand selected impacts of climate change, through activities and interventions that strengthen climate-resilience and sustainability. CREL is supporting and improving good practices in sustainable development, environmental governance and NRM in two interrelated areas: (1) reducing risks and potential impacts of climate change; and (2) developing plans and biophysical interventions to better address the long-term future trends of these impacts.

CREL activities will also increase resilience by focusing on management plans and livelihood diversification. Specifically, CREL is increasing capacity/resiliency by analyzing gaps and adding climate change considerations into resource governance and planning. Management plans that incorporate climate resilience will be developed for all of the co-managed forests and wetlands and their landscapes, making use of earlier PVCAs. Training programs will help stakeholders adapt to the impacts of climate change, while also improving awareness about the importance of environment conservation and biodiversity. Communications and outreach activities will continue to promote awareness and engagement of stakeholders. Resource

mobilization and leveraging efforts will focus on meeting demands identified by communities for investments to improve protection and climate-resilience.

In addition, CREL is strengthening climate resiliency through support that is leading to new and more diversified job opportunities. Beneficiaries are being encouraged to stop livelihood activities that are most likely to be negatively affected by the impacts of climate change. Improved technologies that are being introduced are climate resilient and have a demonstrated market demand. The result will be viable livelihoods and enterprises that increase incomes, sustain resources and productivity, and provide marginal and vulnerable populations with the technical and financial means to adapt to or avoid the negative effects of climate change.

Supporting good practices means building flexibility in plans and avoiding decisions/actions that compromise or limit future adaptive measures to ensure that interventions consider the potential range of climate change impacts. This is being accomplished by increasing awareness, understanding and the capacity of stakeholders, and supporting a blend of complimentary actions (e.g., governance, planning, management and biophysical interventions) that will converge to promote resiliency in communities and ecosystems.

Leveraging and expanding CREL's impact. During year 3 a focus of the field teams will be in expanding and scaling up the capacity building activities with the CMOs. This 3rd year will entail an expansion and scaling up of market based livelihood skill training and market linkages. Increasingly CREL is working together and collaborating with other USAID projects in the SW region for example and with other donor and GoB projects in the other regions. CREL will continue to take a lead in leveraging and expanding CRELs impact through private sector and public sector investment linkages in all regions. CREL has already taken the lead in engaging with other USAID projects particularly the FtF programs. CREL continues to be a leader to other USAID programs and to other donor funded programs on setting up effective monitoring and evaluation programs and CREL has been called on to help both the BAGH project of USAID and the Chittagong Hill Tracts Project of UNDP. CREL will continue to help support others in the areas of livelihoods and monitoring as well as provide support to the USAID mission in leading multi-donor efforts to improve wetland leasing policies.



Climate-Resilient Ecosystems and Livelihoods (CREL)

AID-388-A-12-00007

ANNEXES

Annex I: Work Plan Activities, Actions and Status as of September 30, 2014 (Year 2)

Component 1: Improved Governance of Natural Resources and Biodiversity							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
IR 1	Improved Governance of Natural Resources and Biodiversity						
1.1.	Convene and facilitate National and District level Committees for CREL's implementation.					SOW/TOR for Ministerial Advisory Committee, Technical Advisory Committee, and District Coordination Committees, meeting minutes/resolutions.	District Coordination Committee proposal for wetlands was approved by MOL. <i>Activity will continue in Y3</i> with GOB forming Ministerial and technical committees after approval of the TPPs, and the first meeting at the district level will be convened in Q1.
1.2.	Adjust policy, plans and rules for co-management and NRM.					Meeting minutes, workshop proceedings, draft amendment, policy documents; confirmation from CMOs that the revenue is shared.	Draft reforms of Wetland Leasing Policy finalized for GOB submission by multi-donor working group. Revisions to Forest Protected Area Rules initiated, incorporating Co-management, Sundarbans, and improved revenue sharing. First draft of Wetland Sanctuary Guidelines completed. MOL's Wetland Sanctuary Guidelines and Sundarban revenue sharing are behind schedule. CMC structural revision was scheduled for Y3, but to help contribute to changes in Protected Area Rules this was initiated in Y2. <i>Activity will continue in Y3.</i>
1.3.	Provide training to Upazila staff and Union Parishads on environment, forestry and fisheries policies, regulations and laws.					Approximately 200 Upazila officers and Union Parishad members trained.	Modules, curricula, manuals for LGIs completed. One UP training pilot-tested with 32 participants in Cox's Bazar. <i>Activity will continue in Y3</i> , with Upazila GOB officer's pilot training to be conducted in Q1.
1.4.	Facilitate inclusion of co-management issues and representatives in Union Council's standing committees for better NRM.					CMO representatives in these committees; formal requests for memberships; capacity development needs identified	Collaborated with UP Standing Committees with mandates pertaining to CREL sites and resource-dependent users in PAs. CMO members' inclusion approved. Capacity development needs identified. <i>Activity completed.</i>
1.5.	Implement local action plans to support Union Parishads and CMOs using climate change information in NRM planning and decision-making.					Local actions plans; information hub; PA climate profiles, recommendations for Union development plan.	Information hub linkage established with CDMP's national network. PA climate change profile/framework drafted. Recommendations for UP plans gathered. UP planning program portion of <i>Activity delayed but will be completed in Y3.</i>
SIR 1.1	Strengthened Legal and Policy Framework for Co-Management						
1.6.	Secure government endorsement of public lands for co-management.					MOL order regarding water bodies; Forest Department order regarding forests; meeting minutes.	MOL order halt to tenders of "lease-free areas" and expiring leases of water bodies. Support for reservation of water bodies for CBOs increased and handover decisions for selected batches of water bodies pending. Facilitated FD order on entry fee revenue sharing for Khadimnagar NP, which is being implemented. New proposals submitted for protection of ECA jolmohals and swamp forests. <i>Activity will be completed in Y3.</i>

Component 1: Improved Governance of Natural Resources and Biodiversity							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
1.7.	Strengthen the capacity of co-management institutions					Modified co-management institutional arrangements elaborated and tested; studies commissioned on management of funds, co-management architecture; PFs registered under social welfare; VCFs registered with cooperatives; fishermen cooperatives supported.	CREL staff developed criteria for defining and measuring organizational and functional sustainability of co-management organizations based on assessment tools used in Y1. CREL staff worked with 31 CMOs (23 forest and 8 wetland) to develop customized action plans. In two separate workshops at Chittagong and Dhaka (September 2014), the Chief Conservator of the FD affirmed his support to strengthen the co-management process in Bangladesh to conserve biodiversity and natural resources in PAs. He also acknowledged the sincere efforts of the CPG members in co-managed PAs along with Forest Department's field level staff for resource protection. In the Chittagong region, the Dudpukuria CMC formed a sub-committee to organize actions to stop the operation of tobacco processing stoves in the area, which are fully dependent on forest wood for fuel. <i>Activity will continue in Y3.</i>
1.8.	Form CMOs in new sites.					New CMOs.	Nijhum Dwip co-management fully established. Tengragri WS VCFs and PF formed. Hazarikhil VCFs organized. Halda census completed. <i>Activity on schedule and will continue in Y3.</i>
1.9.	Declaration of forest PAs, ECAs and permanent sanctuaries.					1 New Forest PA; 1 wetland ECA; at least 2 wetland permanent sanctuaries; permanent sanctuary management guideline for Hakaluki Haor; proposal for Ramsar Site designation	New swamp-forest and wetland sanctuary proposals submitted to MOL, and awaiting declaration. New areas for ECA expansion cancelled by DOE. Ratargul and Inani declaration at PAs awaiting FD decision. <i>Activity will continue in Y3.</i>
1.10.	Conduct inventory and update wetland records.					Wetland record inventory for Hail Haor and Hakaluki Haor	Land record data for areas around Hail Haor sanctuary and associated sensitive areas updated. New requirements proposed by MOEF for Munshiganj-Khulna site with MFF. <i>Activity will continue in Y3.</i>
1.11.	Provide training to CMOs and Local governments (Union Parishads).					Training program, training conducted.	CREL facilitated training in VCG meetings. Nishorgo Sayahak refresher training held in all four regions. Training conducted on climate change adaptation and mitigation for CMC and VCF members in Cox's Bazar, Chittagong, and Northeast regions. CPG members in the northeast region trained on laws and regulations related to forests, environment and wildlife. CREL conducted training for CPG members in meetings and discussed the need to stop poaching and illegal tree felling in forest PAs, problems of land encroachment and the importance of sustainable use of land for better livelihoods. Training on ecosystem services and functions provided to local level government officers and CMC members in Cox's Bazar. <i>Activity will continue in Y3.</i>
1.12.	Develop participatory monitoring and reporting systems for threats and other key indicators for forests and wetlands.					Pilot systems established in at least three co-managed sites; guideline for wetland	Site-registers began tracking and recording monthly cases of conflicts and illegal activities. Activities initiated to improve local knowledge of key indicators and strengthening capacity for effective

Component 1: Improved Governance of Natural Resources and Biodiversity							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
						monitoring; systems for reporting threats.	PA protection. <i>Activity on schedule</i> and currently being included in CMO action plans.
Component 2: Enhance Knowledge and Capacity of Stakeholders							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
IR 2	Enhanced Capacity of Stakeholders						
2.1	Develop training curricula, conduct TOT and train CMO members in natural resource management and biodiversity conservation.					Training modules/manuals on improved NRM and biodiversity conservation; training delivered	Developed several curricula, training modules, materials and manuals on Entry Fee Revenue Sharing Mechanism, Financial and Grants Management, Eco-Guide Development for CMC members and local government officials on climate change adaptation and mitigation and climate-resilient NRM. Updated and expanded two manuals on sustainable protected area co-management for biodiversity conservation and CPG originally prepared by IPAC. Developed a flip-chart on climate change and NRM issues suited for training VCF members. Developed training curriculum, two primers, monitoring tools and teachers guide for FELC training and arranged an 8-day foundation training of 20 Literacy Facilitators (Shayaks) and also conducted a ToT on financial literacy monitoring and supervision for 19 field level CREL staff. Developed training module on entry fee revenue sharing and collection mechanism was developed for training CMO members who will be involved in collection of entry fees newly introduced in PAs. <i>Activity on schedule and will continue in Y3.</i>
2.2.	Develop training curricula and conduct training of Union Parishad members and Upazila staff on the current legal and regulatory framework, e.g., environment related laws and rules and policies, including Forest Act and Fisheries Act.					Training modules; training delivered	Facilitated and provided technical support to develop curricula and prepared two manuals and materials on NRM and environment laws/acts, rules and policies for Union Parishad members, Upazila Parishad members and departmental officials posted at Upazila level. Training focus is on laws/acts, rules and policies related to forests, wildlife, fisheries, wetlands, climate change and NRM, disaster management, co-management and gender issues and associated institutional provisions and the role of the judiciary systems. <i>Activity on schedule and will continue in Y3.</i>
2.3.	Meet with existing curriculum review committees with the GOB departments and key Universities					Committees formed; curricula review plans developed	Three workshops arranged to review existing curricula of universities and government training institutions and their content on climate change adaptation and mitigation, climate resilient NRM and co-management. 68 participants of the rank of professor, associate professor and departmental heads from 19 major public and private universities and senior officials assessed their respective curricula, identified gaps and presented these based on group exercises to

Component 1: Improved Governance of Natural Resources and Biodiversity							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
							guide formulation of new curriculum modules. <i>Activity completed with follow-on activities in Y3.</i>
2.4.	Conduct workshops with curricula committees.					Modules prepared; certificates of adoption	Based on the outcomes of the curricula review workshops (Activity 2.3), seven curricula/modules were developed and shared with relevant experts of CREL team, FD, DOF and DOE. Adoption is expected in Y3. A portion of the <i>Activity deliverable is behind schedule</i> , but will be completed in Q1 of Y3.
2.5.	Conduct training on new modules/curriculum.					Teachers and trainers trained	No activity this year. <i>Activity is behind schedule</i> , but will be completed early in Y3.
SIR 2.1	Strengthen Organizational Capacity of NRM Institutions						
2.6.	Build capacity to plan for climate change.					Baseline report, capacity development plan; training report.	Using the modules, manuals and financial primers, 28,909 CMO and VCF members were trained on climate change adaptation and climate resilient livelihoods and 26,936 members were trained on climate resilient NRM and climate resilient livelihoods with a view to improve individual knowledge and skills and increase capacity of CMOs. CMCs and VCFs were oriented on how to assess climate vulnerability and socio-eco-systems in the landscapes of biodiverse areas using PCVA tools and methods. 200 PCVAs conducted in support of developing LLPs and co-management plans that address climate risks and vulnerability, and include ecosystems adaptation options. <i>Activity on schedule and will continue in Y3.</i>
2.7.	Review and update modules/manuals; conduct TOT to build capacity of CMOs.					Training materials and modules; local staff trained, CMOs trained and oriented.	Training curriculum and manual updated for the training of CPGs to include biodiversity conservation and forest protection. CREL also updated an Integrated Training Manual on Protected Area Co-Management for biodiversity conservation for local level government officials and CMC members. CREL staff developed training modules on Entry Fee collection and Revenue Sharing Mechanisms for sustainable co-management, capitalizing on materials USAID's previous IPAC project, modified to meet the needs of the CREL project. Governance training initiated for Union Parishad Members and completed for selected Upazila officers. <i>Activity will continue in Y3.</i>
2.8.	Develop livelihood and enterprise training curricula.					Training modules developed; beneficiaries trained.	Developed financial and entrepreneurial curriculum, two primers, teacher's guide, flip-charts, monitoring tools/check list for FELC training, and arranged both 8-day and 4-day foundation training on two primers for 20 Literacy Facilitators (Sayahaks). Conducted the ToT on financial literacy monitoring and supervision mechanism and literacy mapping for 30 field level CREL staff. On a pilot basis, the seven-month long FELC course was completed in 18 centers with 336 VCF members. The second round of financial literacy training was administered to 3,268 VCF members at 165 FELC. In support of this, the foundation training of 190 Sayahaks (Learning Facilitators) was arranged and completed in all four regions. <i>Activity on schedule and will continue in Y3.</i>

Component 1: Improved Governance of Natural Resources and Biodiversity							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
2.9.	Develop and test co-management stakeholders' self-assessment methods.					Self-assessment method developed and tested in first round by all existing CMOs	CREL developed an assessment method and set of indicators that will be used in the first quarter of Y3. The executive committee of each CMO with CREL staff and a focus group of general members will review their documented progress (records etc.) and score their organization's achievements and challenges against each of these indicators using a standardized format. <i>Activity will continue in Y3.</i>
2.10.	Finalize CMO Action plans and conduct TOT training on governance.					Training reports; ToT; CMO milestones achieved	CREL prepared strategy papers on entry-fee collection mechanisms and CMO architecture to improve governance and sustainability of CMOs. Governance training was also initiated for Union Parishad members and has been completed for relevant Upazila officers. <i>Activity will continue in Y3</i> to implement CMO action plans.
2.11.	Capacity Building of CMOs					Improvements in performance of CMOs (participation of disadvantaged, governance, financial and organizational management, business/financial plans), inter-CMO problem tracking for accountability, local dialogues and outreach; functional reforms.	Action plans prepared for 35 CMOs to improve their capacity for biodiversity conservation and protection. At the same time, CREL advised 31 CMOs on how to make grant proposals to CREL. <i>Activity will continue in Y3.</i>

Component 3: Strengthening Planning and Implementation of Climate-Resilient NRM and Adaptation							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
IR 3	<i>Strengthening Implementation of Climate Resilient NRM</i>						
3.1	Help CMOs develop, modify and get approved management plans for existing sites.					Approved management plans for CMOs (28) that address natural resource sustainability, climate change adaptation, and links with value chains; annual operation plans completed.	CREL originally planned to facilitate preparation of CMO management plans for 28 CMOs in forests and wetlands. However, during consultation and discussion with Forest Department, it was decided to develop landscape-level Forest PA Management Plans. As such the number of inherited forest PAs requiring management plans became 13. During year 2, as a first batch CREL facilitated the drafting of five Forest PA Management Plans in consultation with FD. These plans will cover both PA and its surrounding landscape for the next 10 years, with a breakdown of responsibilities and annual scheduling of activities for FD and each CMC. Incorporating climate change issues and elaborating co-management in the forest PA management plans are the key challenges. The plans make use of and consolidate the earlier village-based PCVA. The draft management plans will comprise a set of agreed measures to manage and restore PAs, and sustain the surrounding environments and communities that will form a basis for future funding. Individual forest CMO Co-Management Plans will be prepared once the landscape level plan is approved. In wetlands, ultimately CREL expects to facilitate preparation of five Wetland CMO Co-Management Plans for existing and new sites (some of which are for large areas). In the two major haors there are multiple community organizations managing clusters of waterbodies, so in this year the focus was on developing three wetland sanctuary management plans within key parts of Hail Haor and Hakaluki Haor. This has focused on local community planning but will be integrated with expert advice and knowledge generated over the past decade. CREL will also develop one Landscape-level Wetland Management Plan for a selected area that includes wetlands and surrounding areas of influence on the wetlands. <i>Activity will continue in Y3.</i>
3.2	Begin drafting management plans for new sites.					Sites approved by GOB; inventory and spatial analysis completed; first draft of management plans completed	In preparation for drafting of management plans for new sites, activity milestone achieve included development of a toolkit for secondary data collection, geo-special data collection and analysis, resource mapping, and multi-stakeholder consultations at different stages. Moreover, VCFs have been formed in most of the new sites, and a CMC was formed for Nijum Dwip NP, as a key initial step to establishing co-management. <i>Activity will continue in Y3.</i>
3.3	Develop landscape level adaptation and mitigation plans.					Landscape level adaptation and mitigation plans for each co-managed site, for use in activity 3.1.	Developed 26 adaptation and mitigation plans at forest beat/union level incorporating climate change issues, these are key inputs to the respective forest PA and wetland management plans. <i>Activity will continue in Y3.</i>

Component 3: Strengthening Planning and Implementation of Climate-Resilient NRM and Adaptation							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables (CA or WP)	Status
3.4	Improve biophysical condition through implementation of co-management plans.					320 ha restored/showing improved biophysical condition.	In total 226 hectares were brought under improved biophysical condition. 10,600 beneficiaries planted approximately: 297,000 fruit trees and fuel-wood trees in public lands and homesteads, a further 285,000 mangrove saplings to stabilize intertidal coastal areas adjacent to the Sundarbans, and 411,000 dune stabilization plants (in eroding coastal areas) in 204 ha. In addition in 22 ha of PA lands local schools worked with FD to plant 298,000 seeds of Garjan and Dhakijam (declining forest canopy trees) to counter poor regeneration. The shortfall is mainly because the planned restoration of wetlands (re-excavation, water retention bunds, etc.) was delayed. Interventions are now approved with environmental clearance and will be implemented in Y3 when water levels are low. <i>Activity will continue in Y3.</i>
SIR 3.1 <i>Increased sustainable financing for CMOs</i>							
3.5	Secure revenue and entry-fee sharing					Established entry fee collection and revenue sharing in 7 forest PAs; improved existing systems in 5 forest PAs.	Progress was made in preparing to establish entry fee collection in three PAs, to re-activate entry fee collection in parts of two PAs, and requests were made for sharing existing revenue collected through leasing in one PA (Himchari). Progress was slower than expected due to negotiations with FD and the need to plan and then construct basic visitor facilities in PAs where no entry fees or visitor facilities existed. <i>Activity will continue in Y3.</i>
3.6	Identify funding sources where GOB revenue sharing is not mandated or possible					Established plan and priorities for CMOs that do not have scope for collecting fees in forest PAs; initial agreements with at least one private sector group.	CREL facilitated all CMCs and some wetland CMOs in preparing resource mobilization plans. In four sites CREL facilitated support from NGOs, government or private sector to CMOs for activities such as tree planting, training, <i>Activity will continue in Y3.</i>
3.7	Assist the GOB to become REDD+ Ready. CREL will support GOB priorities, particularly as related to REDD+					Tools and methods and sites agreed for testing in year 2.	Forest inventories were completed for eight PAs: Lawachara NP, Satchari NP, Khadimnagar NP, Rema-Kalenga WS, Himchari NP, Kaptai NP, Chunati WS and Modhupur NP. This will contribute to local management plan development, measurement of biophysical change, and REDD+ readiness of the FD. CREL also drafted a National REDD+ Atlas and developed standard operating procedures for forest inventories along with a land cover classification, all actions that will inform national readiness for REDD+ <i>Activity will continue in Y3.</i>

Component 4: Improved and Diversified Livelihoods that are Environmentally Sustainable and Resilient to Climate Change							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
4.1	Finalize beneficiary selection					Final list of beneficiaries, Groups Formed, Updated village-based data on the services that reach the poor in the landscape.	50,000 HHs so far 40,836 HH beneficiaries selected and profile of 32,107 HHs uploaded in the CreLLink. 1,044 groups formed on 33 trades. <i>Activity completed.</i>
4.2	Define training needs to strengthen value chains.					Provide income generating training sectors selected.	Training selected and organized in major 10 different subsectors that are, Vegetable, Fish, Capsicum, Strawberry, Tomato, Horticulture, Handicrafts, Eco-tourism, Sunflower and vocational skills. <i>Activity completed.</i>
4.3	Provide income generating training to selected beneficiaries.					Training needs defined, training plans finalized (October), beneficiaries trained (November onwards), Local Service provider Identified and trained. Eco tourism facilities developed and local stakeholder trained.	20,843 beneficiaries trained among 33 various trades and 400 local service provider trained (see trade names under 4.2). <i>Activity will continue in Y3.</i>
4.4	Identify and strengthen markets for resource users					Markets and channels for market information established.	Markets and channels for market information established, data on people trained entered into M&E database. <i>Activity will continue in Y3.</i>
4.5	Link targeted beneficiaries to credit programs and other donor-funded projects					Meeting reports of regional meetings, Training reports, List of Credit programs linked with CREL, pilot savings group formed.	9 separate partnerships established and functional. <i>Activity will continue in Y3.</i>
4.6	Provide financial and entrepreneurial literacy training					Assessment of curriculum (after roll out); training reports.	185 Financial and Entrepreneurship Literacy Center Established for 3604 livelihood participants. <i>Activity will continue in Y3.</i>

Gender							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
Gender 1.1	Conduct Participatory Gender Need assessment at PAs level (CMCs, CMOs/RMOs, and VCFs/RUGs).					Participatory Gender Needs Assessment conducted; directions for gender equality and empowering women prepared.	Developed tools for gender needs assessment. Assessment has been conducted in 14 CMOs, with 14 Gender Action Plans prepared to ensure greater gender equality and women's empowerment. <i>Activity completed.</i>
Gender 1.2	Organize basic literacy and entrepreneurship skills training and other leadership and competency training for women and men					Financial and entrepreneurial training provided to women.	Training in progress. <i>Activity on schedule and will continue in Y3.</i>
Gender 1.3	Organize Gender mainstreaming training in NRM and climate change adaptation					Gender mainstreaming training in NRM and climate adaptation training manual developed; increased competency of government officials and staff; CREL supported organizations to mainstream the participation of women in NRM and climate change activities.	Conducted ToT for CREL staff. Trained staff are now providing training to CMO committees. 14 CMCs received this training, and the remaining will be trained in Y3. <i>Activity will continue in Y3.</i>
Gender 1.4	Develop Gender Scorecard					Gender Scorecard; M&E team trained	Gender Scorecard Survey prepared, field-tested and finalized. Staff were trained in conducting the survey and filling out the questionnaires. Baseline for the Scorecard will be completed in Q1 Y3. <i>Activity completed.</i>
Gender 1.5	Finalize gender strategy for CREL					Final Gender Strategy; orientation workshops	Gender strategy finalized and submitted to USAID. Orientation workshops conducted for CREL partners who will implement the strategy. <i>Activity completed.</i>
Gender 1.6	Design and disseminate public awareness, mobilization messages and activities that will improve the understanding of gender-based issues and compensating actions.					Public awareness and mobilization messages distributed.	Public awareness messages prepared and communicated. Posters on Gender Equality and Workforce Diversity printed, distributed, and posted in all CREL offices. <i>Activity will continue in Y3.</i>

Communications and Outreach							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
COM 1.1	Raise public awareness and understanding of co-management.					Public awareness materials developed and focused on principles of co-management, natural resource governance, and CREL initiatives.	Public awareness materials developed as per IR demands. Meetings arranged and presentation developed as needed. <i>Activity on schedule.</i>
COM 1.2	Develop and use communications materials to inform populations about conservation, biodiversity and protection.					Communication materials and activities conducted; change in understanding among people in inherited sites of governance principles and stakeholder responsibilities.	Communication materials, e.g., calendars, posters and brochures designed and distributed. Publications were designed and delivered for information and awareness purpose. Events were rolled out as scheduled in the communication strategy. <i>Activity on schedule.</i>
COM 1.3	Orient journalists on good governance issues in co-management and natural resources.					Orientation and training events held; journalists trained and oriented to co-management.	Journalist orientations held, but workshops and training plans not conducted due to lack of interest from Journalists. <i>Activity on schedule.</i>
COM 1.4	Develop sign boards and communications materials to support demonstration plots.					Sign boards and communication materials.	Signboards designed and delivered as based on regional demand. Signage list for PAs developed and designed with updated information. Replacement of PA signage will begin in Y3. <i>Activity on schedule.</i>
COM 1.5	Develop communication materials to provide information on markets.					Materials focused on markets and consumers on CREL's climate resilient livelihoods.	Materials focused on markets and consumers on CREL's climate resilient livelihoods designed and developed to support livelihood activities. <i>Activity on schedule.</i>
COM 1.6	Develop activities focusing on youth in both national and local levels.					At least one youth group linked to a PA or co-management site.	Youth groups linked to all CREL events. <i>Activity on schedule.</i>
OR 1.1	Radio Journalism					Consultation workshops held with potential implementation partners; signed MOU with partners; youth trained in radio journalism and radio program production.	MOU been signed with 2 radios in 2 regions. 50 youths received training from on Radio Journalism. 12 of participants are working as interns with the stations. <i>Activity on schedule.</i>
OR 1.2	Green Run					Children and Youth in CREL sites participating in Green Runs in four regions of CREL with their parents.	Green Runs held in 3 regions with 3000 participants and 5000 spectators from the surrounding communities. <i>Activity on schedule.</i>
OR 1.3	Forest Camps					Forest Camps organized; universities educated about co-management and NRM issues; university youth awareness increased.	Forest camp with participants from BRAC University held in Rema Kalenga WS with youth producing ecotourism facility designs and taking photo that were viewed in the Asia Tourism Fair by 35,000 attendees. <i>Activity on schedule.</i>

Communications and Outreach							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
OR 1.4	School Programs/Child Consultation					School Programs/child consultations held; children are oriented on CREL issues commensurate with their family members.	School programs in 28 schools in all 4 regions of CREL held successfully. A total of 5000 participated in these events. <i>Activity on schedule.</i>
OR 1.5	Masjid Campaign					Friday Khutbah by Imams with messages on co-management.	54 Imams and Purohits were oriented in three separate orientation programs and used this knowledge in their regular religious preaching. <i>Activity on schedule.</i>
OR 1.6	Meet Your Team (MYT) program.					MYT meetings held; coordination among co-management organizations achieved; coordination with field administration and local government improved.	<i>Activity cancelled</i> due to lack of relevance to CREL objectives.
OR 1.7	Co-management Fairs					Awareness of direct and indirect beneficiaries raised.	<i>Activity cancelled</i> due to lack of focus on CREL objectives
OR 1.8	Interactive Popular Theatre (IPT)/ Pot Songs.					Raised awareness and demand raised for improved NRM	Two regions organized three performances where 5,000 audiences attended. This <i>activity will continue</i> to Y3.
OR 1.9	River Keeper Program					Assessment report for River Keeper Program	<i>Activity cancelled</i> due to undefined geographical focus.
OR 1.10	Observation of Special Days					Awareness raised nationally and locally	25,000 people took part in events organized by CREL to observe special days. Wide media coverage of these events helped promote CREL initiatives. <i>Activity on schedule.</i>

Grants							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
G 1.1	Build the capacity of CMOs to apply for and manage grants					Prioritized training plan and materials; training administered to CMO participants; monitoring plan.	Organized pre-grants workshops in all regions with CMOs members to build the capacity of CMOs. 31 CMOs applied for grants. Disbursed funds to 13 CMOs. Awarding of grants to an additional 18 CMOs in progress. <i>Activity on schedule and will continue in Y3.</i>
G 1.2	Make small grants to CMOs and/or CBOs to restore ecosystems, enable effective biodiversity conservation, and/or enhance community adaptation to climate change					Grant applications; grant evaluation sheets; grant agreements; CMO reports on activities and finances.	Eight CMOs awarded small grants to restore ecosystems, enable effective biodiversity conservation, and/or enhance community adaptation to climate change in the Khulna region. CMOs currently using these funds to support these efforts. <i>Activity on schedule and will continue in Y3.</i>
G 1.3	Award competitive research grants to address knowledge gaps and test techniques and methods					Per year two research grants awarded; studies underway.	CREL awarded a JDR 3 RD grant to a multidisciplinary team comprised of researchers of from the University of Chittagong, Bangladesh Agricultural University, Directorate of Forest and GIS unit of CNRS. The team conducted reconnaissance surveys and prepared a detailed 10-month work plan that includes survey instruments. <i>Activity on schedule and will continue in Y3.</i>
G 1.4	Enhance NGO capacity development for transition grants					Assessment report using OCA tool; participatory capacity-building plans; provision of technical assistance and training; monitoring plan.	Initiated Transitional Grants training program on "HR Modules" with 6 NGOs for building their capacity in institutional development. At the end of year 3, at least one of these NGO will be certified and qualified to receive up to \$625,000 annual in direct funding from USAID beginning in Year 4. Our Next modules will be organized in November. <i>Activity on schedule and will continue in Y3.</i>

Monitoring and Evaluation							
No.	Activities	Q1	Q2	Q3	Q4	Deliverables	Status
M 1.	Operationalize CreLink					Field teams trained; data entered.	Real-time data entry in progress from all CREL sites and regions; CreLink has about 150 users; backlog of data largely entered; primary reports are being generated. <i>Activity completed.</i>
M 2.	Baseline surveys of economic benefits for a sample of target stakeholders.					Baseline income and employment survey completed; baseline data.	Brief profiles of year 2 livelihood beneficiaries are populated in CreLink. Sample survey of 189 beneficiaries for baseline and impact done; sample design for further 290 households prepared. <i>Activity completed for 1st stage and scheduled for Y3Q1 for 2nd stage.</i>
M 3.	Landscape identification and mapping.					Maps for use by CMOs in local plan development; landscape atlases	CREL- GIS and M&E team have drafted landscape/zone of influence areas of 14 PA/ sites, based on locations of villages involved in co-management and in consultation with site teams. RapidEye imagery based land cover maps were developed and used in Forest Carbon Inventory (eight sites) as well as for PA Management Plans (five sites). A national atlas was developed and shared. <i>Activity partially completed; remaining ones including new sites are in progress.</i>
M 4.	Forest/Carbon inventory of selected forest protected areas.					Carbon inventory data; inventory report.	Forest Carbon inventory 2014 conducted in 8 Forest PAs (Himchari NP, Chunati WS, Kaptai NP, Modhupur NP, Rema-Kalenga WS, Satchari NP, Lawachara NP and Khadimnagar NP); field data collection, analysis, RS land cover maps and inventory results/ reports completed and shared with relevant stakeholders. <i>Activity completed.</i>
M 5.	GIS/Remote sensing data and atlas for CREL sites.					GIS/RS database and atlas developed for CREL sites	GIS/remote sensing data for all 22 inherited sites compiled, archived and used for land cover mapping. Building geo-spatial data for 9 new sites in progress. Atlas for national REDD+ developed and shared. Another Atlas for all PA maps will be prepared in the fourth year of the project. <i>Activity completed.</i>
M 6.	Biological monitoring of biophysical changes.					Data on selected indicator species; preliminary assessments of changes.	Tools and methods for site-specific biological monitoring developed. Fish catch monitoring in Hail Haor, Hakaluki Haor, Sonadia, Halda and Sundarbans underway, designed but not started in Nijumdip. Waterbird census completed in Jan-Feb 2014 in all (six) main wetlands covered by project. Resident forest bird survey for 2014 is completed in 14 forest PAs. <i>Activity completed.</i>
M 7.	Contribution to National REDD+ Readiness Roadmap.					Compilation of existing GIS and remote sensing data; guidance on CREL contribution to roadmap; steps and schedule for the pilot activity; schedule of milestones.	CREL developed SOPs, conducted forest carbon inventories and land cover classification, shared results to REDD+ actors in Bangladesh including Forest Department and Sylva Carbon team as process of UNREDD+. <i>Activity completed.</i>
M 8.	Mainstreaming Gender in CREL					Gender scorecard developed to monitor project impact on gender inclusivity	Based on IFPRI's WEAI approach and CREL's updated Gender strategy (Gender Opportunities and Action Learning Strategy or" GOALS") a gender scorecard has been developed and tested for use with FELC members. The survey is scheduled for Y3Q1. <i>Activity part completed</i>

Annex II: CREL M&E Indicators with Targets and Results for Year 2 (October 2013-September 2014)

Indicator	CREL Indicators	Unit	LOP Target	Target to end PY2 (Oct/12-Sept/14)	PY2 Target (Oct/13-Sept/14)	Result PY2 (Oct/13-Sept/14)	Result Cumulated (Oct/12-June/14)	Remarks
	CREL DO: Increased responsiveness and resilience to climate change in vulnerable biologically diverse environments.							
1	F4.8-7: Quantity of greenhouse gas emissions, measured in metric tons of CO ₂ e, reduced or sequestered as a result of USG assistance	tCO ₂ e	1,230,000	300,000	300,000	301,781	301,781	Mostly from protection of Forest PAs using USAID's AFOLU Calculator.
2	F4.8.2-26: Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance.	persons	80,000	10,000	10,000	9,941	9,941	a and b may include a very small double counting – this will be verified in Year 3
	a) implementing risk-reducing practices (C13)		50,000	0	0	1,200	1,200	From Indicator 19
	b) using CC information (C4)		30,000	10,000	10,000	8,741	8,741	From Indicator 8; Initial project years concentrate in providing CC information to the stakeholders who will use CC information in decisions in later years, here PCVA participants who developed village level Climate Change Adaptation Plans counted
	IR 1: Improved Governance of Natural Resources and Biodiversity							
3	F4.8.2-28: Number of laws, policies, agreements, or regulations addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially proposed, adopted, or implemented as a result of USG assistance.	nos.	14	3	3	2	2	This summary line is for the formal submission/proposal stage only; One of the measures submitted reached approval and implementation stage in Year 2

	4.8.2-28a – Sustainable landscapes related measure	Analyzed	6	6	4	2 (P2, P4)	4 (P1, P2, P4, P10)	P1, P2 etc. refers to policy areas defined in CREL M&E plan. Analysis is in progress in the other policy areas that did not reach draft stage. Submission is a lengthy collaborative process with government and in some cases other projects and development partners.
		Drafted		5	5	3 (P1, P4, P10)	3 (P1, P4, P10)	
		Submitted		1	1	1 (P4)	1 (P4)	
		Approved		1	1			
		Implemented		0				
	4.8.2-28c. Adaptation related measure	Analyzed	7	5	3	1 (P8)	1 (P8)	
		Drafted		3	3	1 (P6)	1 (P6)	
		Submitted		2	1			
		Approved		0				
		Implemented		0				
	4.8.2-28d. Cross-cutting measure related to multiple climate change areas	Analyzed	1	1			1 (P9)	Inclusion of CMOs in UP standing committees implemented (approval is localized). Note this was originally treated as an adaptation measure but is actually cross-cutting and was adjusted to this heading in the CREL M&E plan.
		Drafted		1			1 (P9)	
		Submitted		0		1 (P9)	1 (P9)	
		Approved		0		1 (P9)	1 (P9)	
		Implemented		0		1 (P9)	1 (P9)	
SIR 1.1 Strengthened Legal and Policy Framework for Co-Management.								
4	C1: Number of legally defined public land units assigned long-term for co-management.	nos. of land units	50	30	10	1	1	CMC developed in Nijhum Dwip WS. 153 land units including 42 jolmohals requested and in process with MoLand
SIR 1.2 Increased Demand for better NRM								
5	C2: Number of institutions requesting actions from higher governance tiers for better NRM.	nos. of requests / bodies	310/150	30/10	30/10	54/36	64/41	Overachieved

IR 2: Enhanced Capacity of Key Stakeholders								
6	F4.8.1-27: Number of people receiving USG-supported training in NRM and/or biodiversity conservation.							Replaced, after PY1, by the following indicator F4.8.1-29
	F4.8.1-29: Number of person hours of training in NRM and/or biodiversity conservation supported by USG assistance	Person -hour	50,400	16,000	12,000	37,154 (M-18,618; F-18,536)	39,046 (M-20,172; F-18,874)	
7	C3: Number of training modules and curricula developed to promote co-management and climate resilience.	nos.	5	0	0	0	0	Consultations on curricula development in progress
8	C4: Number of stakeholders using climate information in their decision making.	persons	30,000	10,000	10,000	8,741	8,741	Initial project years concentrate in providing CC information to the stakeholders who will use CC information in decisions in later years.
SIR 2.1 Strengthened Organizational Capacity of NRM Institutions								
9	C5: Number of institutions with improved capacity to address climate change issues.	institutions	90	0	0	0	na	No target for PY2; will be measured annually
10	C6: Number of co-management units with improved performance.	Nos. of CMO/CBOs	65	0	0	0	na	No target for PY2; will be measured annually and assessments scheduled for comparison with baseline
SIR 2.2 Improved Knowledge and Skills of NRM stakeholders								
11	C7: Number of people receiving training to build resilience to climate change.	persons	50,000	14,550	12,000	24,252 (M-8,497; F-15,755)	24,262 (M-8,507; F-15,755)	
IR 3: Strengthened Implementation of Climate Resilient NRM								
12	F4.8.1-26: Number of hectares (ha.) of biological significance and/or natural resources under improved NRM as a result of USG assistance.	ha	698,678 + 43,000					
	a) biologically significant areas already under improved management	ha	698,678	0	0	0	0	CMOs continue to function and PA management plan development in progress, for inherited sites.

	b) Other NR areas (Landscape) with inherited sites	ha	No target but documented	na	na	120,542	120,542	Substantial progress in determining extent of landscapes for inherited sites/CMOs ready for landscape management planning. Landscape areas (outside biologically significant) determined for 13 sites, remaining sites will be determined in iterative process with stakeholders during Y-3.
	c) New biologically significant areas added in CREL	ha	43,000	17,000	17,000	16,352	16,352	CMC formed in Nijhum Dwip WS. In progress for other new sites.
	d) New other NR areas (Landscape) added in CREL		No target but documented	na	-	-	-	Landscape areas being identified as part of planning for new sites
13	C8: Number of hectares (ha.) of biological significance and/or natural resources showing improved biophysical condition as a result of USG assistance.							
	a) BS areas (Core) with direct intervention	ha		65	65	22	22	PA tree seeding. Wetland habitat restoration is seasonal and scheduled for Qrt1-2 of PY3.
	b) Other NR areas (Landscape) with direct intervention	ha		255	255	204	204	Direct intervention areas counted here.
	c) BS areas (Core) under co-management		Baseline measure only	na	na	na	na	No targets set for these areas, but measurements will be made for baseline and EoP condition
	d) Wider NR area under co-management		Baseline measure only	na	na	na	na	No targets set for these areas, but measurements will be made for baseline and EoP condition
SIR 3.1 Increased sustainable financing of CMOs								
14	C9: Funding leveraged from public and private sources contributing to improved natural resource management.	Million USD	\$ 20 million	0	0	\$ 0.185 m	\$ 1.873 m	Private sector and project, plus contributions from participants in tree planting. Further efforts to tap private sector finance in progress.
15	C10: Number of co-management organizations realizing improved revenue sharing.	CMOs	15	3	3	0	0	Significant progress made for 3 CMOs; however, depends on Govt. decision to establish entry fees or realize improved revenue sharing. For new entry fee sites basic visitor facilities needed first and construction scheduled for early Year 3 (dry season)
SIR 3.2 Improved Planning for Climate Resilient NRM								

16	C11: Number of villages implementing actions to sustain and/or enhance resilience of their NR base.	villages						
	a) inherited		900	0				
	b) new		150	150	150	102	102	Reflects actual number of villages using new sites and where VCFs or VCGs exist/formed. Further villages will be added in Year 3 when all CMOs are formed.
IR 4: Improved Livelihoods that are Environmentally Sustainable and Resilient to Climate Change								
17	F4.8.1-6: Number of people with increased economic benefits derived from sustainable NRM and conservation as a result of USG assistance.	People	500,000	25,000	25,000	29,900 (F-16,045; M-13,855)	29,900 (F-16,045; M-13,855)	Only horticulture livelihood beneficiaries that started activities early in 2014 could complete harvest cycles – based on a sample survey an estimated 2,170 (households) of these achieved higher incomes from cultivation (11,100 people). In addition at least 3,700 fisher households in Hail Haor (about 18,800 people) achieved on average slightly higher incomes from fishing
SIR 4.1 Increased investment in eco-friendly enterprises								
18	C12: Additional market revenue generated from PAs and landscapes as a result of USG assistance.	Million USD	\$ 4.5 mill	\$ 0.355 mill	\$ 0.315 mill	\$ 0.504mill	\$ 0.504mill	
	Additional net household income		3.3	0.075	\$ 0.075 mill	\$ 0.161 mill	\$ 0.161 mill	Increase in agriculture income January-June, only for beneficiaries trained in horticulture by early 2014.
	Additional value of wetland products		1.01	0.2	\$ 0.200 mill	\$ 0.300 mill	\$ 0.300 mill	In Hail Haor fish catches remained at about the same level as previous years (actually 15 kg/ha above the last monitored year) If 15 kg/ha is taken for 12,490 ha then gain is \$ 0.3 mill
	Additional income from tourism enterprises		No target					Estimate in final year
	Visitor fees		0.23	0.08	\$ 0.040 mill	\$ 0.043 mill	\$ 0.043 mill	
SIR 4.2 Increased adoption of environmentally sustainable climate resilient livelihoods								

19	C13: Number of farmers and others who have applied improved technologies or management practices.	nos. of farmers	50,000	0	0	1,200	1,200	Estimated based on practices found from horticulture beneficiaries from early batch of training.
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Annex III. Success Stories

EMPOWERING COMMUNITIES AND MARKET OPPORTUNITIES: How one woman community leader created livelihoods for the landless

(Josna Akter, Cox's Bazar, Himchari NP, Paner chara – Shia O Rakhainpara)

“I am like a mother with 30 daughters” Josna Akter said, “and I have to help all of them.” Josna has always been a valuable resource for her community in Shia para, a small village near Himchari National Park outside the city of Cox's Bazaar, especially for women who typically do not have the same access to information as men due to societal constraints that make consulting



Photo 29: Josna Akter, CREL trained Local Service Provider, picking a cucumber from her personal plot where she teaches other small farmers about improved farming techniques she learned from CREL.

with men outside their families difficult.

Josna's father worked for the Forest Department, her mother for Health Services. Through them Josna gained a greater knowledge of agricultural and health issues than most, and women and men come to her for guidance. Due to her unofficial role as community “mother,” Josna was elected by the people in her village to become a Local Service Provider (LSP) through the Climate-Resilient Ecosystems and Livelihoods (CREL) project, a USAID funded initiative implemented by Winrock International and local partners.

As an LSP, Josna participated in a training program on the agricultural value chain, market linkages, business planning, improved agricultural practices for vegetable

cultivation, and how to teach others. Her role as an LSP is to be a source of information for farmers in her community, providing instruction and advice on improved agricultural practices, and linking farmers to quality input supplies and markets for their products.

“Before,” she said, “I had knowledge but could not implement it.” The CREL training not only expanded her technical knowledge of farming practices, but also connected Josna to service providers and sources of information. Previously Josna had never contacted the local agricultural extension officer as she did not know how or even fully understand the extension officer's role. Now she feels confident to contact them whenever she has a question about a farming practice or to troubleshoot problems.

In order to pass on her knowledge, Josna is using her own fields as a demonstration of improved farming techniques, working closely with a group of women in her community to help them learn and adopt the same practices. Josna realized, however, that the primary barrier facing many women in building their own income was that they lacked access to land where they could cultivate vegetables.



Photo 30: Josna, far left, with some of the women who are part of a vegetable Producer Group she assists.

Feeling empowered by her training and role as an LSP, Josna approached a company in Cox's Bazaar which owned a plot of land in her community. She arranged to lease the land, and divided it into 8 parcels. She assigned each parcel to a woman who had no land of her own to farm. The landowner has been so impressed by the women's work that he has offered to provide a prize to whoever has the best harvest each season.

In the future, Josna plans to further support these and other women farmers by serving as a collection point for their production, and taking the produce to the market in Cox's Bazaar. For small quantities the additional cost of transportation to Cox's Bazaar is prohibitive, but farmers can receive higher prices in this larger market compared to their local markets. This will also help support Josna in her role as an LSP. She will take a small percentage of the additional profits to compensate for her own time and effort which she has contributed to the farmers. This model will help ensure Josna continues to be able to provide information and market linkage services to her village after the CREL project has ended. Josna looks forward to expanding her impact to even more farmers in her community.

CREATING ECONOMIC OPPORTUNITIES FOR WOMEN IN BANGLADESH: Financial and Entrepreneurial Literacy Center Training leads to alternative income generation

(Financial & Entrepreneurial Literacy Training, Baruna Handicraft Group, Sylhet, Hail Haor NP, Hazipur)

Many communities depend upon the aquatic natural resources of Hail Hoar in Northeast Bangladesh. This wetland ecosystem supports an abundant variety of flora and fauna, but over-extraction by the very communities that depend on these resources has put them under threat. The Climate-Resilient Ecosystems and Livelihoods (CREL) project, implemented by Winrock International, is attempting to support local communities and combat this unsustainable extraction by creating alternative livelihood opportunities. One such initiative was a 7-month intensive Financial and Entrepreneurial Literacy Center (FELC) training course, provided to a group of 20 women in the village of Baruna, Sylhet.

Through the training course, the women learned how to read, write, and make basic calculations. They also learned how to apply these skills to increase income and improve their lives through entrepreneurship. For example, one young woman, Nur Akter Noa, previously ran a small tailoring business that she had to shut down because she was unable to keep track of the accounts, such as how much people owed her. The FELC taught her how to track her income and expenditures in order to calculate profits and savings, and how to keep written records of orders and payments. This has allowed Nur to reopen her tailoring business, and she has even involved two other young women from the course and is instructing them in tailoring.



Photo 31: Financial and Entrepreneurial Literacy Training participants in their classroom describe what they have learned and show off their completed workbooks. Nur Akter Noa, far right, has used her new skills to reopen her tailoring business along with two other young women.

The women have also formed their own Savings Group based on a story from their textbook. They call their group “Natuna ālō” or “New Light”. They pool savings to provide small loans to member’s for establishing or expanding different economic enterprises. In addition to the 20 FELC participants, they have recruited 30 other women from the community to enroll. In as little as five months, they collectively saved BDT10,500 (US\$135). This is enough

for most members to take out small business loans.

Rubina Begum, another young participant of the FELC, plans to use a loan from Natuna ālō to expand her small flock of ducks so that she can increase production of eggs and sell them in the local market. The FELC training course helped build her confidence, and gave her skills to manage money and create a business plan. Other members have claimed similar successes.

Not only have these women been able to use what they learned in the FELC to improve their livelihoods, they have also passed on their knowledge to others in the community. Those with children have been teaching them letters and numbers, hoping to provide them with greater opportunities through education. Some have also begun to instruct other women in their community.

The women are proud to share what they have learned, and feel they now receive more respect from their community and families. While they continue to be eager to learn, and look forward to participating in further technical trainings provided by CREL, Nur stated “we are now confident to improve our income and status even without additional training.”

In the near future, the group plans to save enough money to take out a bank loan and start a small garment business to employ local women. As another member offered, “We women are capable of doing anything if we are trained, and will we make Natuna ālō large.”

NATURAL RESOURCE MANAGEMENT AND GENDER EQUALITY: Bangladeshi women are empowered to take on leadership roles in forest co-management institutions

In Bangladesh, women are making strides in protecting forests as they take on leadership roles in forest co-management institutions. With support from USAID, the Climate-Resilient Ecosystems and Livelihoods (CREL) Project is scaling-up and adapting successful co-management models to conserve protected areas, improve governance of natural resources and biodiversity, and increase resilience to climate change. This brings together resource-dependent households, different communities, civil society, and the Government of Bangladesh to collectively conserve, protect, and manage natural resources. Recognizing that forest governance and resource management improve when women are included in forest management executive committees and able to effectively participate in decision-making, CREL has implemented a “Gender Approach” in co-management institutions. This approach includes different strategies for improving communication, gender relations, shared divisions of labor, and women’s empowerment, and the setting of targets for increasing women’s involvement in co-management institutions as general members and in executive and/or office-holder positions.

Co-management institutions have been, in the past, largely comprised of men. However, this is now starting to shift as more-inclusive and gender-balanced reorganizations of community-based organizations and co-management committees and councils occur. Among co-management institutions the percentage of women general members and representatives in intermediary and apex councils or committees is growing in all of CREL’s four regions. Women are now 51% of Village Conservation Forum members and nearly half (44.5%) of People’s Forum members. At the Co-Management Council and Committee levels, the numbers are smaller at 21% and 17.5%, respectively. These numbers are a step in the right direction, and a marked improvement on previous male-female ratios within co-management structures and institutions.



Photo 32: Khorshada, Teknaf People’s Forum Secretary, to the right. Morjina,, Teknaf People’s Forum President, to the left.

A good example of this shift is Teknaf. CREL has been working in the Cox’s Bazar region since 2013. The Teknaf People’s Forum has been working with the Forest Department since 2010 to protect the forest resources, reduce poaching, and conduct trainings and awareness-raising meeting through the local Village Conservation Forums. People’s Forums are comprised of two representatives from each VCF. Before CREL’s intervention no attention had been given to maintaining gender equality

and ensuring equal access to and control over the benefits and resources generated by the project. CREL guidelines set minimum targets for female representation at 50% of general members and 40% of executive members, including at least one office-holder position.

The election for the Teknaf People’s Forum was conducted in June by the Forest Department. The results were very promising. The People’s Forum now has equal numbers of women and men in its general body. Among the 11-member executive committee, five are women (45%),

and the President and Secretary are also women. The President and Secretary of Teknaf's People's Forum expressed that they were excited and proud, and will commit themselves to working actively and effectively.

Since this turnover in leadership and the more active involvement and decision-making of women, the People's Forum has demonstrated significant results, including:

- Monthly meetings held regularly, with greater participation and punctuality
- Increased cooperation and coordination in project activities
- Improved internal communication with both male and female People's Forum and Village Conservation Forum members
- Greater attention to equity in the provision of benefits and resources, to overcome previous discrimination, subordination, and inequalities

Studies from around the world have demonstrated that projects which consult women and succeed in creating enabling environments or "safe spaces" for them to improve their knowledge, voice their opinions, and assume positions of leadership have better outcomes and sustainability results. The women in Teknaf credit CREL with giving them the opportunity to be leaders. CREL created the platform, but these women are proving that they are ready and able. In the intervening months, they have attended different Village Conservation Forum meetings to solve conflicts and problems, and raised awareness about reducing dependence on natural resources and protecting the environment. They are also attending different trainings and workshops with the aim of stopping illegal activities in the forest. Having a greater leadership role has increased their self-esteem and the respect they receive from the community and within their households.

PROMOTING RESILIENCE AND BIODIVERSITY: Co-management institutions formed to better protect Nijhum Dwip National Park in the Bay of Bengal

In the early 1950s, a cluster of islands emerged in the shallow estuary of the Bay of Bengal. Originally noticed by fishers, who named it Baular Char (meaning “alluvium of sand”), the former Minister Amirul Islam Kalam named it “Nijhum Dwip” in 1979 after observing its isolation and natural beauty. The Forest Department started an afforestation program on the north side of Nijhum Dwip in 1974. Covering 9,000 acres, this area has since grown into a dense mangrove forest with a great variety of plant species and wildlife. About 145 species of birds, mammals, reptiles, and amphibians have been observed on Nijhum Dwip. The most prominent is Spotted Deer, now believed to number over 5,000. However, internationally Nijhum Dwip is important as the wintering ground of internationally significant numbers of migratory waterbirds, including globally threatened species (it is the world’s main wintering site for Indian

In 2001, the Government of Bangladesh declared 40,390 acres of coastal island, mangrove, intertidal mudflats and channels as Nijhum Dwip National Park. However, for more than a decade, little was done to protect or manage this unique and fragile ecosystem. This is beginning to change with the introduction of co-management, facilitated by USAID-supported Climate Resilient Ecosystems and Livelihoods Project (CREL).



Photo 33: Natural Beauty of Nijhum Dwip National Park

Skimmer, regularly hosts Nordmann’s Greenshank and sometimes the critically endangered Spoon-billed Sandpiper).

Nijhum Dwip was uninhabited until the 1980s. Initially, a few erosion victims from nearby Hatiya Island relocated and established a settlement. Now about 30,000 people live here, mostly fishing, grazing livestock and a few cultivating crops. For energy they rely on fuelwood collected from the forest. As the population increased so did

pressure on the mangrove ecosystem. Settlers started to encroach on forest and harvest large quantities of wood to build houses and boats. During high tide a significant portion of the island is inundated with water, making it easy to cut large trees and float the wood to their houses.

Coastal ecosystems are highly productive, but extremely sensitive and fragile. Not only does deforestation impact animal habitats, it also makes the islands more vulnerable to climatic hazards (storms). Fish lay their eggs in tangled roots of mangrove trees and later hatch and grow because the needed nutrients are available – intertidal mud is rich in invertebrates feeding fish and birds. Overfishing, hunting and grazing in and around Nijhum Dwip, including the emerging Domar Char, threaten waterbirds and fish stocks, including an important spawning ground for the national fish Hilsha.

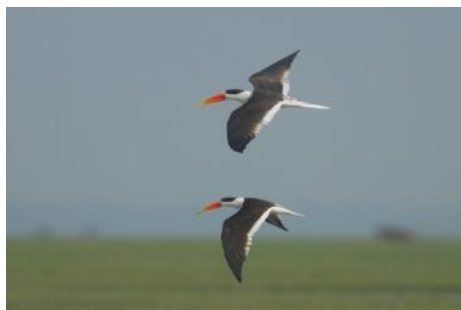


Photo 34: Indian Skimmers of Nijhum Dwip

On April 8, 2001, the Government of Bangladesh declared 40,390 acres as Nijhum Dwip National Park including 11 small islands in the Jahajmara Range, planted mangrove forests, intertidal mudflats and accreting char areas, and coastal waters. However, for more than a decade, little was done to protect or manage the unique and fragile ecosystem of this National Park (NP). This is beginning to change with the introduction of co-management. The Climate Resilient-Ecosystems and Livelihoods (CREL) Project, implemented by Winrock International and its partners with funding from USAID, is working with local communities in collaboration with government agencies to protect and

manage Nijhum Dwip.

Effective co-management depends on building relationships, communication and collaboration. Initially, there was skepticism about the benefits of co-management. However, CREL organized a series of community meetings on the co-management approach and the importance of conserving forest resources, winning over the skeptics and building support from local people and government officials.



Photo 35: Spotted Deer of Nijhum Dwip

With CREL facilitation, the architecture for co-management institutions has taken shape with local communities, the Forest Department, and officials. At the grassroots level, 22 community groups (known as Village Conservation Forums or “VCFs”) have been formed, involving 1,073 people (371 men and 611 women). These VCFs include households that are most dependent on natural resources. They have agreed to support co-management and conservation, and will receive support to take up alternative livelihood activities on condition that they adopt sustainable fishing practices and stop trapping birds and cutting trees.

Drawn from these VCF members is a 44-member People’s Forum to coordinate among VCFs. At the apex level is a 59-member Co-management Council comprising village/ community representatives, local councilors, Forest Department and other officials. This Council was formed in September 2014, as was its executive body – the 24-member Co-management Committee. In a transparent and participatory process, participants elected a President, Vice President, and Treasurer by majority vote, endorsed by the Upazila Nirbahi Officer (sub-district chief administrator).



Photo 36: September 24, 2014, gathering to declare Nijhum Dwip National Park Co-

A new era of opportunity for conservation and forest management has begun in Nijhum Dwip, based on an inclusive and collaborative approach to co-management. Already, the discussions on co-management have motivated local people to think about natural resource sustainability, and helped them realize the importance of biodiversity and conservation. As one female VCF member expressed, “If forests exist, Nijhum Dwip will exist.”

CREATING SUSTAINABLE LIVELIHOODS FOR ALL: Local youth expands his options and opportunities through agricultural training

(Ealish, Chittagong, Dudpukuria-Dhopachari WS, Dudpukuria CMC, Falaharia Muslim para)

Ealish, a young man of 18, lives in the hills outside the city of Chittagong in the village of Falaharia Muslim Para. This village is located on the border of the Dudpukuria-Dhopachari Wildlife Sanctuary, an area rich in biodiversity. However, the Sanctuary is in peril. Many of the communities living in and around the protected area rely on extraction of natural resources from the forest to survive. Ealish had relied on collecting fuel wood from the forest, along with limited work as a day laborer, to help support his household of seven. His options and opportunities were extremely limited as Ealish has received only minimal education and he suffers from an intellectual disability. Few people in his community expected him to achieve much.



Photo 37: Ealish, third from the right, posing with other operators of the demonstration plot in front of their field with CREL staff.

Recently, however, Ealish has been enrolled in a 7-month intensive Financial and Entrepreneurial Literacy Center training course through the Winrock-implemented Climate-Resilient Ecosystems and Livelihoods (CREL) project. This course taught Ealish and 19 other men from his community how to read and write, as well as numbers and basic calculation. Ealish is now proud to be able to sign his name, and is using these skills to support his new work in agricultural production.

In addition to the literacy training, Ealish was selected by his community to participate in operating a vegetable demonstration plot along with 3 other men. The demonstration plot, supported by CREL, is intended to show people that alternatives to extracting from the forest exist, and to instruct them on improved farming techniques. Ealish and the other men received training on the use of high quality hybrid seeds, organic fertilizers (such as compost and cow dung), proper bed preparation, and sowing and spacing techniques. Crops were chosen to target high value markets. The day our team visited the demonstration plot the group had just returned from the morning market having sold out, receiving a high price for their chilies and cucumbers due to the increased demand during Ramadan.

Ealish had never been taught anything about farming before. Now he is replicating everything he has learned in his own parcel of land. The CREL project has taught him “a complete farming method” he said, and he is very optimistic for his first harvest. By helping Ealish build his own capacity, CREL has allowed him to be more self-reliant and increase his income. This has increased his confidence and standing in the community. Ealish is also proud to be showing others how vegetable cultivation can be a productive livelihood that is not dependent upon the forest, helping to advance CREL’s mission of improving the sustainable use of natural resources

throughout the community.

CHANGING LIVES THROUGH IMPROVED TECHNOLOGY: Agricultural training and demonstration plots increase productivity and incomes

Shoroma Rani Mondal lives in Mathurapur, Munshiganj, a village in Shatkhira District in southern Bangladesh near the Sundarbans. She used to spend all day in the brackish water in the rivers collecting larval shrimp to sell to shrimp producers. Her income from selling larval shrimp to local markets supplemented her husband's income for their family of five. Her husband, Bimol Mondal, worked mostly as a day laborer and seasonal larval shrimp collector.



Photo 38

Shoroma grew vegetables around the house to supplement her income, but it was never enough. She usually made very little profit from vegetable gardening because of poor soil conditions and use of expensive inorganic fertilizers.

Shoroma joined the Village Conservation Forum (VCF) and was invited to become a part of the Technology Demonstration Plot group. Both of these are supported by Climate-Resilient Ecosystems and Livelihoods (CREL) Project, with funding from USAID. Along with five other group members, she received training on improved technology and farming methods for vegetable production. They also received training on producing organic compost fertilizer. CREL helped the group lease unused land in a nearby shrine where they grew vegetables using compost fertilizer. Their technology demonstration plot became a huge success. People from surrounding areas came to see their crops and learn how they achieved such high quality and high returns.

Shoroma started to apply the same techniques to her home garden. She used homemade compost for her vegetable plots and fruit bearing trees. She sold 40 kilograms of guava bringing her a profit of BDT19,000 (US\$250) in one month alone. With her increased income, she is now able to send her children to school.

She has become an example for others as a successful homestead gardener and is an inspiration for other women in her locality. Now they come to her to learn the vegetable production process with the improved technology. Improved technology training support made Shoroma a “change agent” of Mathurapur village.

RECLAIMING THE COMMONS IN BANGLADESH: Local People take Action to stop Encroachment in the Hail Haor Wetland Ecosystem

Local communities have grown increasingly concerned about aquaculture enterprises being established on khas commons (public lands) within Hail Haor. Aquaculture farms construct high embankments that restrict the free flow of water, fish and boats within the wetland, and traditional users are excluded from catching fish and collecting aquatic plants in areas converted to aquaculture. This is negatively affecting local people's lives and livelihoods.

Hail Haor is one of the largest and most important wetlands of Bangladesh. The water area of the Haor expands to a total area of just over 12,000 hectares in the wet season, and shrinks to under 3,500 hectares in the dry season. This vast wetland ecosystem is comprised of about 90 beels (waterbodies, or shallow lakes that retain water year-round) and numerous canals, and provides essential resources and nutrition in both the wet and dry seasons. As many as 172,000 people (30,000 households) reside in the 60 villages that surround Hail Haor. About 4,000 of these households depend fully or significantly on fishing in the Haor and most of the others collect fish or other resources for subsistence. In the dry season, much of floodplain is cultivated with boro paddy and used as grazing land for cattle. Local people also rely on the Haor for fodder, building materials, fruit, and medicinal plants. Community-based Resource Management Organizations (RMOs) had managed small sanctuaries within Hail Haor for ten years, while they had rights. However, local government officials did not renew the tenures on these leases. In addition, one of the RMOs has managed a relatively large (about 170 hectares) permanent sanctuary known as Baikka Beel since 2004. Extensive areas of public land in the Haor, including areas adjacent to the permanent wetland sanctuary of Baikka Beel, have and continue to be converted into large aquaculture enclosures and sets of ponds by well-connected elites and their business associates. Tensions have been mounting over access to and use of commons and khas land resources in Hail Haor for several years. An increasing number of poor people were being displaced from both khas lands and the seasonal common water that submerged private lands, as well as denied access to Haor resources, sometimes forcibly. In one instance, a cow owned by a landless family was killed for grazing near an illegal fish farm. When the husband and wife went to the owner of the fish farm for compensation, they were both badly beaten. In another case, after the government provided legal tenure to 69 hectares of khas land for landless families, the land was forcibly seized from them, converted into large aquaculture ponds, and sold for a large sum to a third party.

The USAID-supported Climate-Resilient Ecosystems and Livelihoods (CREL) Project, is working with many of the communities surrounding Hail Haor, including Baikka Beel (which has had USAID support since 2004).

CREL has facilitated discussions on wetland management and conservation in community and courtyard meetings, and helped to organize meetings with elected officials to explain local people's concerns and the impact of encroachments on the Haor wetland ecosystem. As a result of these meetings, local communities began to organize themselves to voice their concerns to



Photo 39

In April and May 2014, local people submitted petitions to the Deputy Commissioner of Moulvibazar District, and served complaints to the Minister for Social Welfare and the Minister for Fisheries and Livestock. In response, the Upazila Nirbahi Officer, Srimongal, was requested to investigate the situation and take necessary actions. However, no further actions were taken by the local administration. On May 22, RMO members, locally elected leaders, respected elders, and several thousand residents demonstrated by forming a “human chain,” and submitted a memorandum to the Deputy Commissioner’s office to stop encroachment and the reclassification of waterbodies (from common wetland areas into large aquaculture enterprises).

In July 2014, local people organized yet another community meeting, this time with the Kalapur Union Parishad Chairman. Following this discussion, the Chairman gave illegal fish farm owners one month to transfer their property safely. This timeline was extended twice. In September 2014 (following the end of the second extension), about 2,000 local people took action to reclaim the



Photo 40

khas commons using bamboo sticks and shovels. They collectively demolished high embankments and dykes, and destroyed illegal fish farm structures. Eight fish farms were affected, freeing from aquaculture enclosures and embankments more than 50 hectares of wetland.

Local communities are requesting:

- Removal of illegal fish farm embankments and restoration of the affected areas, with local administration demarcation of khas lands.
- Punishment of land grabbers.
- Ending leases for khas land.
- Formation of a Hail Haor protection committee, with representatives from the administration, local government, and local communities.
- Mobile courts that can investigate the construction of illegal structures on a monthly basis.
- Continued protection of Baikka Beel permanent sanctuary by Barangangina RMO as recognized through co-management.

CREL stands behind communities in their efforts to better manage critical ecosystems and resources. CREL's work supports good governance and policy reforms for more effective community-based resource management, greater resilience to the effects of climate change, and increased biodiversity.

STRENGTHENING CLIMATE RESILIENCE IN BANGLADESH: A participatory approach to local planning helps communities identify vulnerabilities and adaptation strategies

Many regions in Bangladesh are at risk due to hazards posed by the effects of climate change. Climate resilience is the ability of a community to anticipate, resist, absorb and rapidly recover from the effects of climate variability and change, with minimum socio-economic and environmental losses. This requires analysis, planning, and preparation.

The USAID-supported Climate-Resilient Ecosystems and Livelihoods (CREL) Project is working with communities throughout Bangladesh to help them assess the vulnerabilities and adaptive potential of their ecosystems and livelihoods. CREL developed the Participatory Climate Vulnerability Assessment (PCVA) to engage local people and key stakeholders in collectively analyzing risks and vulnerabilities, and preparing comprehensive village-based plans for climate resilience and adaptation. The PCVA follows a participatory process that identifies likely changes for the area, compiles information on status, risks, trends and experiences, and helps to prepare a local adaptation and mitigation plan. The tools used are spatial, temporal, and qualitative. They include transect walks, resource and hazard mapping, a vulnerability matrix, trend, timelines and seasonality analyses, as well as livelihood risk analysis and coping patterns, hazards identification and prioritization, and institutional linkages.



Photo 41: Multi Stakeholder Consultation Workshop

Recently, PCVAs were conducted in coastal villages near the Sundarbans (in the Khulna Division). This southwestern coast of Bangladesh is an area known for its vulnerability to cyclones and other natural disasters. Recently, the lives and livelihoods of many families in this region were badly affected by two devastating cyclones (Sidr and Aila). The massive storm surge increased salinity and had negative and long-lasting impact on soil fertility, fresh water sources, agriculture and fisheries production, and poultry and livestock. Scientists predict a possible increase in their frequency and intensity as a result of climate change.



Photo 42: Participatory process during PCVA

The PCVA consultations identified key climate threats and vulnerabilities, and specific interventions that could be taken to address current and future climate impacts.

Threats and vulnerabilities that may be increased as a result of climate change were identified and these included cyclones, tidal surges, river erosion, salinity intrusion, and high tides. In terms of households and

livelihoods, the greatest vulnerabilities related to aquaculture, agriculture, drinking water, livestock, health and sanitation, and non-timber forest products. In response to these identified threats and vulnerabilities, the community identified and began planning different interventions to strengthen resilience and minimize risks posed by current and future climate change impacts. More specifically: (1) agricultural interventions: raising the height of embankments, repairing or replacing sluice gates, canal re-excavation, and the introduction of saline-tolerant crops and varieties; (2) natural resource interventions: establishing fish sanctuaries, afforestation through plantations and protection, and a ban on fishing with poison and illegal nets or gear; (3) water, health, and sanitation interventions: additional pond sand filters, deep tube wells, water reservoirs, pond re-excavation, sanitary latrines, and health clinics.

The results of the PCVA were presented in multi-stakeholder workshops that included community members and concerned local government departments. In these, marginalized groups living in the most vulnerable locales were able to present their plans for addressing risks and vulnerabilities, and pursuing adaptation needs and priorities. This has helped to increase local ownership of the process and identify potential resources at the village, union, and forest protected area levels. These plans are now forming the basis for coordinating support from CREL and other agencies to strengthen the climate resilience of both livelihoods and ecosystems. These community-generated plans will be incorporated into the CMO Co-Management Plans that CREL is helping develop for the purpose of strengthening climate-resilient natural resources management.

CREL Contributions Build Climate-Resilient Ecosystems in Bangladesh

USAID's Climate Resilient Ecosystems and Livelihoods (CREL) Project is working in Bangladesh, adapting co-management for 22 forest protected areas (PAs), three wetlands and four ecologically critical areas (ECAs), covering 48,029 hectares. CREL's overall objectives are to expand successful co-management models to conserve wetlands, ECAs and PAs, improve governance of natural resources and biodiversity, and increase resilience to climate change through improved planning and livelihoods diversification. In Bangladesh, the natural resources in PAs and adjacent or "buffer" areas face multiple pressures from illegal felling of trees, encroachment, over-extraction and hunting by forest-dependent people living on the margins, as well as invasive species and the effects of climate change. These impacts are reducing the resilience and biodiversity of landscape ecosystems, and increasing vulnerability to climate change and other threats.



Photo 43

To reduce pressure on forest resources, in 2014 CREL has planted nearly one million trees and plants (a total of 993,943). Tree saplings were planted on roadsides (39,875), family homesteads (211,703), institutional premises (e.g., local schools and mosques) (45,706) and in mangrove ecosystems (235,486) in intertidal areas, and plants were planted on coastal dunes (411,173). In addition, 297,680 seeds of Garjan (*Dipterocarpus turbinatus*) and Dhakijam (*Syzygium spp.*) were sown within PAs to assist with natural regeneration, many of these by local school children. In total, 204 hectares were brought under improved biophysical condition by planting trees and plants. These plantations will provide corridors of shade and stabilize road embankments. They also will protect and stabilize fragile coastal areas that are vulnerable to storm surges and soil erosion as well as increase carbon storage and climate-resilience. Moreover, they will provide fruit and fuelwood for families, increasing income and available sources of nutrition through the more productive use of homestead land.

As many as 10,624 beneficiaries were directly engaged in planting seedlings, nearly 30% female. Community-based organizations involved in co-management (Village Conservation Forums, People's Forums), Co-management Committees (CMC), landowners, and concerned government departments signed multipartite agreements for planting, maintenance and benefit-sharing of these trees. Under these agreements and based on the local situation, benefits will be distributed as follows: Union Parishad (locally elected government council) 10%; CMC 10%; beneficiaries 30-45%; landowning agency 20-35%; and kept for replanting in a tree revolving fund 10%. Local communities are also involved in the Project Implementation Committees, which were formed to guide plantation activities.

Tree species selection was done very carefully in consultation with the co-managers - forest department and local communities. The selection process took into consideration local demand,

suitability, growth rates and medicinal values; and was limited to native species of biodiversity value that are adapted to local and future climate-related conditions. In total, 30 timber, 23 fruit, 12 medicinal, and 10 mangrove species were identified as suitable. Native species included Koroi (*Albizia procera*), Chikrashi (*Chickrasia tabularis*), Kadom (*Anthocephalus cinensis*), Chapalish (*Artocarpus chaplasha*), Jam (*Syzygium cumini*), Jackfruit (*Artocarpus heterophyllus*), Payara (*Psidium guagava*), Amloki (*Terminalia emblica*), Haritoki (*Terminalia chebula*), Aurjun (*Terminalia arjuna*), Jarul (*Lagerstroemia speciosa*), Lotcon (*Baccaurea ramiflora*), and Neem (*Azadirachta indica*).



Photo 44

With support from USAID, CREL's work is bringing together different stakeholders to better manage and protect natural resources. CREL aims to improve the biophysical condition of 1,340 hectares of biologically significant forest and wetland areas during the project period (2012-2017), in close collaboration with co-management institutions and government agencies. This will help to conserve and restore biodiversity, wildlife habitats and ecosystem services, as well as increase carbon storage and improve the lives and livelihoods of local people.